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THE GEAR, THE GADGETS, THE TRIBE

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FEATURE

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04 on the dvd

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- Microsoft DirectX (June 2008)
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06 editorial

TONY SARNO

AMD'S LAZARUS-LIKE COMEBACK HAS BEEN WELL RECEIVED IN OUR LABS

I have lost count of the number of friends who have an expensive stereo gathering dust in their lounge room because they listen to their music mostly on their iPods. For many of us who now download our music from places such as iTunes, stereos are turning into museum pieces for old media such as music CDs.

Even in cars, sound systems are increasingly built around the iPod. Toyota's latest Corolla commercial is the first time we've seen a mainstream car ad promote MP3 connectivity as a key selling point.

Our cover story on iPod docking audio systems (page 50) shows that the music media of the future is not a disc, but the MP3 player itself, making it inevitable that the next generation of home stereos will integrate deeply with iPods. As our tester Jenneth Orantia points out, some are now already good enough to replace your old stereo.

And in the world of PCs, the new Core i7 and AMD Phenom processors are busy making previous processors obsolete. Intel is said to be planning major price cuts designed to drive quad-core into the mainstream, while AMD has finally got it right with its new Phenoms (see our review of the great value TI Deluxe Phenom 810 on page 30).

AMD's Lazarus-like comeback after problems with its previous generation of processors was welcomed in our Labs. For a while last year it looked like Intel was on its way to inevitably claiming 100% share of the market. Just think about it — more than any OS, the CPU is the brains of the PC. No CPU, no PC. And yet, it looked as if one company would eventually become the only manufacturer of a piece of technology that quite literally now runs the modern world. That was a scary prospect.

But AMD's new 45nm Phenom II CPUs are competitive with Intel's Core i7 line. Combined with the fact that they work with cheaper motherboards and memory they're actually better value taken from a full system point of view. AMD has always differentiated with the "value" positioning, and it's good to see it sticking with it.

tsarno@acpmagazines.com.au

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SHUFFLE WITHOUT CONTROLS
Apple's new iPod shuffle comes with no playback controls; Apple has moved them into the headphones and also added voice-over technology that reads out song title and artist information. It's another stylistic triumph for Apple, but many see it as a triumph of form over function. Playback controls in the headphones means that if you lose the headphones you can't use ones from third parties and your shuffle becomes a matchbox-sized brick.

BLU-RAY vs CBHD
Just when we thought that the Blu-ray vs HD DVD format wars were over comes the news that the Chinese are pushing their own HD format, known as China Blue HD (CBHD), which is much cheaper to produce than Blu-ray. After initially expressing relief that the Blu-ray vs HD DVD battles were over, the studios are now clambering to support CBHD given the size of the Chinese market. Warner Bros has announced many of its titles, including *Harry Potter*, will support CBHD.

FASTER STORAGE
A new 6Gbit/s (600MB/s) SATA 3 standard has been demonstrated by Seagate and AMD and should be available this year. The new standard blows away SATA 2, which offers up to 3Gbit/s (300MB/s) but will be backward-compatible and use the same cables. Both AMD and Intel are planning chipsets to support SATA 3.

Storage death battle!

Mechanical drives are pushing storage to the limits to fight solid state drives.

A year ago, solid state drives were a curiosity: fast but ridiculously expensive and with little actual storage. Now, OCZ has released a 1-terabyte SSD that fits into an x8 PCI-E slot and manufacturers such as Samsung, Patriot, Toshiba and Sun Microsystems have announced SSD storage systems. The SSD trickle is turning into a flood and prices are coming down. But makers of mechanical drives aren't sitting still. Western Digital has just released a 2-terabyte 3.5in internal hard drive (WD20EADS), based on WD's 500GB/platter technology (with 400GB per square inch of density) and a 32MB cache. Curiously, WD has released it under the Caviar Green range, which is its eco-friendly set of drives that use less power. The drive retails for $469 (NZ$589), the price of a 500GB drive from a couple of years back. Analysts say some 10 per cent of 3.5in hard drive sales are at the 1TB level or higher already. The big advantage mechanical drives have over SSDs is that once the fixed costs of a drive are taken care of (motor, spindle, PCB and cables), increasing capacity doesn't add much more cost. The costs of SSD drives go up in a linear fashion when you add more flash memory.

1TB SSD!
No longer a cost-to-storage absurdity, flash drives are starting to become a more practical option for mainstream PC consumers.

HOT PRODUCT

Tiny projector

It's the tiniest, coolest projector out!

At first glance it looks like a mobile phone, until you plug a video source into it and it turns into an LED projector. The world's smallest projector, that is. 3M's Micro Professional Projector MPro 110 weighs only 152 grams but can take a VGA source from a computer (PC or Mac) or RCA video from a smartphone, camera, camcorder or media player and project it into an image that can be up to nearly 50in or 1.2metres wide. We hooked it up to a notebook VGA port in the *APC* office, switched it on, and its tiny LED lamp (rated at 10,000 hours) immediately switched on and projected a Windows *7* screen onto a wall with surprising sharpness once the lights were dimmed. While the $649 (ex. GST) MPro 1100 is just not powerful enough in lots of ambient light, it's perfect for small business meetings or even impromptu film showings to a small group where the lights can be dimmed enough.

TOP 10
OVER-THE-TOP PHONE BILLS

Telco customers who received a shock when they checked their bills. (Converted to Australian dollars.)

1 $218 TRILLION
Telekom Malaysia customer after disconnected line kept racking up bills.

2 $2.2 MILLION
New Zealand woman wrongly billed by New Zealand Telecom in 2007.

3 $124,000
Canadian oil-field worker who used his handset as a modem for his computer.

4 $100,000+
Telstra customer Camberwell Electrics in 2008: had PABX hacked.

5 $62,000
Vodafone UK customer downloaded episodes of *Prison Break* on his mobile.

6 $49,700
18-year old Telstra customer last Sept. used his mobile as a laptop modem.

7 $22,000
Vodafone UK customer in 2008 downloaded four episodes of *Friends* via a mobile.

8 $11,668
Norwegian politician quit after a 48,000 kroner ($11,668) bill for calls to fortune tellers.

9 $6,000
BigPond gamer this year went over the 60GB limit of his plan by more than 38GB.

10 $3,100
Dorchester UK resident whose dial-up internet connection made 40 calls toAfrica.

DELL STUDIO ONE 19
A new generation of PCs is starting to appear for Microsoft's next-gen OS, but will the specs be on target?

BUILT FOR WINDOWS 7

PCs with Windows 7 specs hit the market.

Some PC makers are starting to build for Windows 7 by including touchscreen and better wireless networking capabilities in their hardware, while Microsoft is warning others to start testing the new OS on their hardware to avoid a repeat of the Vista-capable fiasco.

Dell is one of the first with its Dell Studio One 19, which features multi-touch capabilities of the kind that will be supported by the new OS. To be released locally next month, the new Dell PC comes with touchscreen software that enables users to navigate through applications (from paint to music and video creation programs) just with their fingers. It will hit the market with Vista, but when Windows 7 arrives, the Studio One 19 will show off all of the new OS's touchscreen capabilities. It's clear that PC makers see Windows 7 as giving them the opportunity to create a new style of PC designed to live in lounge rooms and kitchens, where The Studio One 19, and similar machines such as the HP TouchSmart series and even ASUS's new Eee Top will shine.

Windows 7's superior support of wireless networking is also getting PC makers' support. Beta testers say Win 7's Mobile Broadband enhancements make wireless internet connections far easier and more reliable, and several companies such as Acer and ASUS have now publicly committed to supporting the enhanced networking capabilities.

Microsoft however has warned hardware makers about testing their hardware with builds of the Win 7 beta, because it plans a much tougher Windows 7 certification program than it did with Vista. This is probably due to the time Microsoft has spent in court defending itself against a class-action suit over its Vista-capable program, which saw many PCs classified as Vista-capable when they clearly weren't.

BMW PC case

A first for a car maker!

What's the best way to solve an airflow problem in a case? Remove the case. BMW-owned Designworks USA has been pegged by Thermaltake to design a concept case, dubbed "Level 10", for the company's 10th anniversary. With some sneak peeks creeping out at CeBit, the word on the street is a full announcement at this year's Computex in Taipei.

In what looks like the rugged skeleton, or an inside-out case, each component is housed separately. Sure, it ticks all the right boxes for aesthetics (at least for those people who don't mind *2001*-style monoliths in the room), but we fear the reality of actually building a system in one is going to be much tougher.

LEVEL 10
Stanley Kubrick would have approved of this concept PC case.

TRIBAL COUNCIL...

APCMAG.COM ASKED

Chinese crackers have cracked the algorithm for iTunes gift cards. Would you buy one?

YOU REPLIED

47% 42% 11%

APCMAG.COM ASKED

Microsoft is leaving out Blu-ray playback from Windows 7. Should Microsoft include it?

YOU REPLIED

29% 44% 27%

HEAD2HEAD

After failing to release an Android phone, Kogan needed to deliver with its new Agora netbook. We compare it to the popular MSI Wind U100.

	KOGAN NETBOOK	MSI WIND
CPU	Intel Atom 1.60GHz N270	Intel Atom 1.60GHz N270
Memory	1GB RAM	1GB RAM
HDD	160GB	120GB
Screen	Widescreen 10.1in (1,024 x 600)	Widescreen 10in (1,024 x 600)
Battery	3-cell; 2-3 hour life	3-cell; 2-3 hour life
Dimensions	1.2kg; 265 x 31 x 185mm (WHD)	1kg; 260 x 31.5 x 180mm (WHD)
OS and apps	GOs and Open Office	Windows XP Home
Key ports & comms	1 x Ethernet; 802.11b/g wireless; 3x USB 2.0; 1x VGA; SD/MMC/MS/MS Pro card reader	1 x Ethernet; 802.11b/g wireless; 3x USB 2.0; 1x VGA; SD/MMC/MS/MS Pro card reader
Price	$499	$590
Verdict	Nothing new in the technology, and comes with Linux. Base model has a bigger hard disk and is the first 10in notebook under $500. Value winner for geeks.	Base model nearly $100 more than the Kogan with similar specs, but comes with Windows XP, which means you can run Windows apps. Winner for rest of family.

ABC News
Top Stories
Obama out to remake US image abroad
US President Barack Obama set about fearing down eight years ...
Xenophon prepared to keep negotiating on stimulus

THE ABC GOES MOBILE

ABC launches Android and iPhone applications.

The Australian Broadcasting Corporation's web site is very popular, but it's not terribly mobile-friendly, with a lot of content to display on very small screens. That's now changed with the national broadcaster announcing ABC Mobile. The new mobile site features sections for News, Weather, Sport, TV, Movies, Local News, Triple J, ABC Radio, Movie Reviews and ABC Shop.

The ABC Mobile site is all big, friendly buttons, and pretty quick too. At the announcement, managing director Mark Scott said the ABC had developed applications for the iPhone and Android platforms that would be available free of charge.

The iPhone Application is a little tricky to find (as you might expect, the search term "ABC" returns more than a few results) but once installed, offers a richer interface than the basic ABC Mobile, including the ability to download and watch ABC-related video and audio podcasts, although you still can't stream radio through it. Users of other smartphone platforms such as BlackBerry can expect a basic Java application "soon" to cover the functionality of the iPhone and Android applications.

NUMBER CRUNCHING

RIM BLACKBERRY SALES 2008

23,149,000

60,925,500

Nokia smartphone sales 2008

11,417,500

APPLE IPHONE SALES FOR THE SAME PERIOD

SOURCE: GARTNER

THE (A)PC REVOLUTION
MAY / 1985

RADIO WARE

Dick Smith Electronics in conjunction with Radio New Zealand is undertaking a venture to provide software by commercial radio on 26 stations across New Zealand. The Telesoftware broadcast goes out in the form of an audio tone at the somewhat inconvenient time of 3.30am on Wednesday mornings. Dick Smith is negotiating a similar concept with radio networks in Australia, and also in the United States, where the company has recently established operations.

APPLE LASER PRINTER

A high-resolution laser printer that allows business users to produce near-typeset quality graphics from their desktop micros should be available from Apple soon. The LaserWriter, as it is known, has the AppleTalk Personal Network built in, so that one printer can be shared by up to 31 people. It also features an RS232 port, so that it can be connected to other external devices. The LaserWriter will work on all Apple machines.

Photoshop fakes!

Software can tell if photos have been doctored in Photoshop.

Such is the depth of Photoshop skills in the community that it's becoming harder to tell images that have been altered in Photoshop from real ones, so a program called JPEGsnoop has been created to find the fakes.

JPEGsnoop works on the basis that every digital photo contains heaps of hidden information that tells the true story of the photo's origins. Not only can it determine the various settings that were used in the digital camera when taking the photo (EXIF metadata, IPTC), but also extract information that indicates the quality and nature of the JPEG compression used by the camera in saving the file and whether Photoshop has altered it.

The makers of JPEGsnoop, ImpulseAdventure, say that each digital camera specifies compression quality levels, many of them wildly different. JPEGsnoop has an internal database that compares an image against a large number of compression signatures. It reports what digital camera or software was likely used to generate the image. "This is extremely useful in determining whether or not a photo has been edited or tampered with in any way. If the compression signature matches Photoshop, then you can be pretty sure that the photo is no longer an original," says ImpulseAdventure.

Could JPEGsnoop have quickly disproved the allegations that some raunchy photos of a girl were of a young Pauline Hanson? Not if the photos were taken in the '70s with a film camera. But if taken recently with a digital camera, JPEGsnoop would more than likely have picked out any Photoshop involvement in their creation.

Frankly, we're astonished a digital photo carries so much embedded information. Among the other data JPEGsnoop analyses, which can also be affected by Photoshop modifications, is chrominance and luminance, chroma subsampling, JPEG quality settings, JPEG resolution settings, Huffman tables, EXIF metadata, Makernotes, RGB histograms, and so on.

JPEGsnoop can be downloaded from **tinyurl.com/d2e795**.

RUDDY HELL
Pauline Hanson isn't the only politician to have suspicious, intimate photos turn up on the web. We ran this one through JPEGsnoop and are happy to report that it's a fake. . . or is it?

Mustknow

Essential knowledge

THE END OF THE MEGAPIXEL RACE

The optimum number of megapixels in a digital camera is about 12, say digital camera experts. Akira Watanabe from Olympus says once the count goes beyond 12, improvements in image quality start to hit the law of diminishing returns. As more pixels are jammed onto a sensor, their size shrinks and so does their ability to collect light. They also generate more heat, which results in more noise during low-light shots. The diminishing returns of high megapixel counts are particularly pronounced in compact cameras, more so than DSLRs, because the sensors are generally smaller. So to keep on delivering better-quality photos to consumers, camera makers are shifting their focus to areas that will have a more pronounced impact on picture quality, such as dynamic range, better colour reproduction, better ISO sensors and new-generation auto-focus systems.

Topsite

URL of the month

BUILD ONLINE FUNCTIONALITY

Creating a web site these days is easy with commodity CMSs like Wordpress, but some functionality is still difficult to add, such as customer feedback forms, surveys, mailing lists and so on. *Wufoo.com* is a site that lets you build sophisticated online forms and integrate them easily into your site, and it collects the data to your account. Its free offering lets you create up to three forms of up to 10 fields each, but its fee-based options give you industrial-grade form building.

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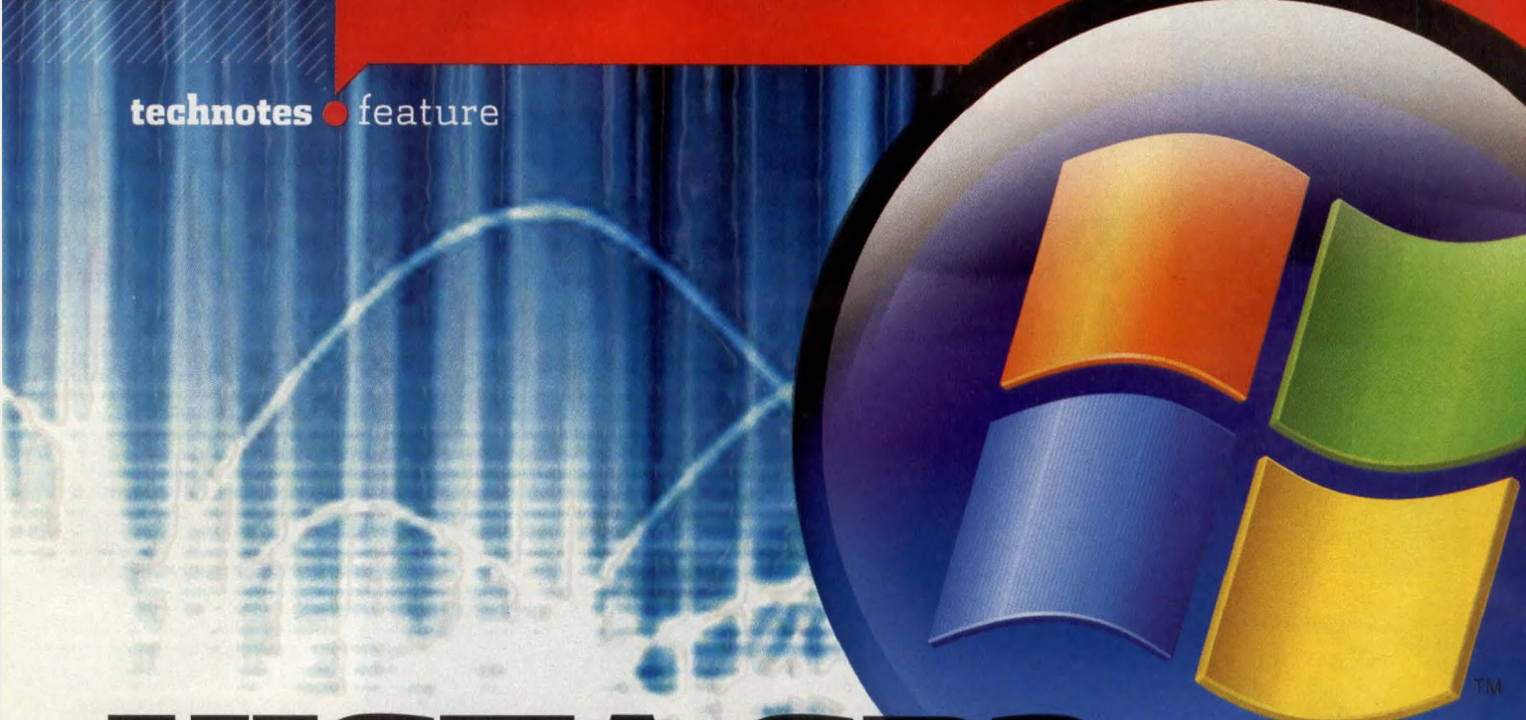


VISTA SP2: WHAT'S NEW?

By the time you read this article Microsoft will have released the final build of Windows Vista SP2. So what's in it for you? **James Bannan** reports.

Vista SP2 is nothing like the much-anticipated predecessor, in that SP1 was a major update which incorporated a large number of changes and fixes designed to resolve many issues inherent in the RTM build. SP1 also brought the client platform kernel in line with the server platform — Vista SP1 and Server 2008 operate at the 6.0.6001 version level.

SP2 is actually a dual-release — it's the second service pack for Vista and the first for Server 2008, again keeping the two platforms on the same kernel version. SP2 is also more like a classic service pack (like XP SP3) — a rollup of post-SP1 patches, updates and hotfixes. SP1 is a prerequisite of SP2, as an RTM-to-SP2 update would simply be far too large. So if you're still running the RTM build of Vista (and if you are, why?) then you'll have to patch to SP1 before applying SP2.

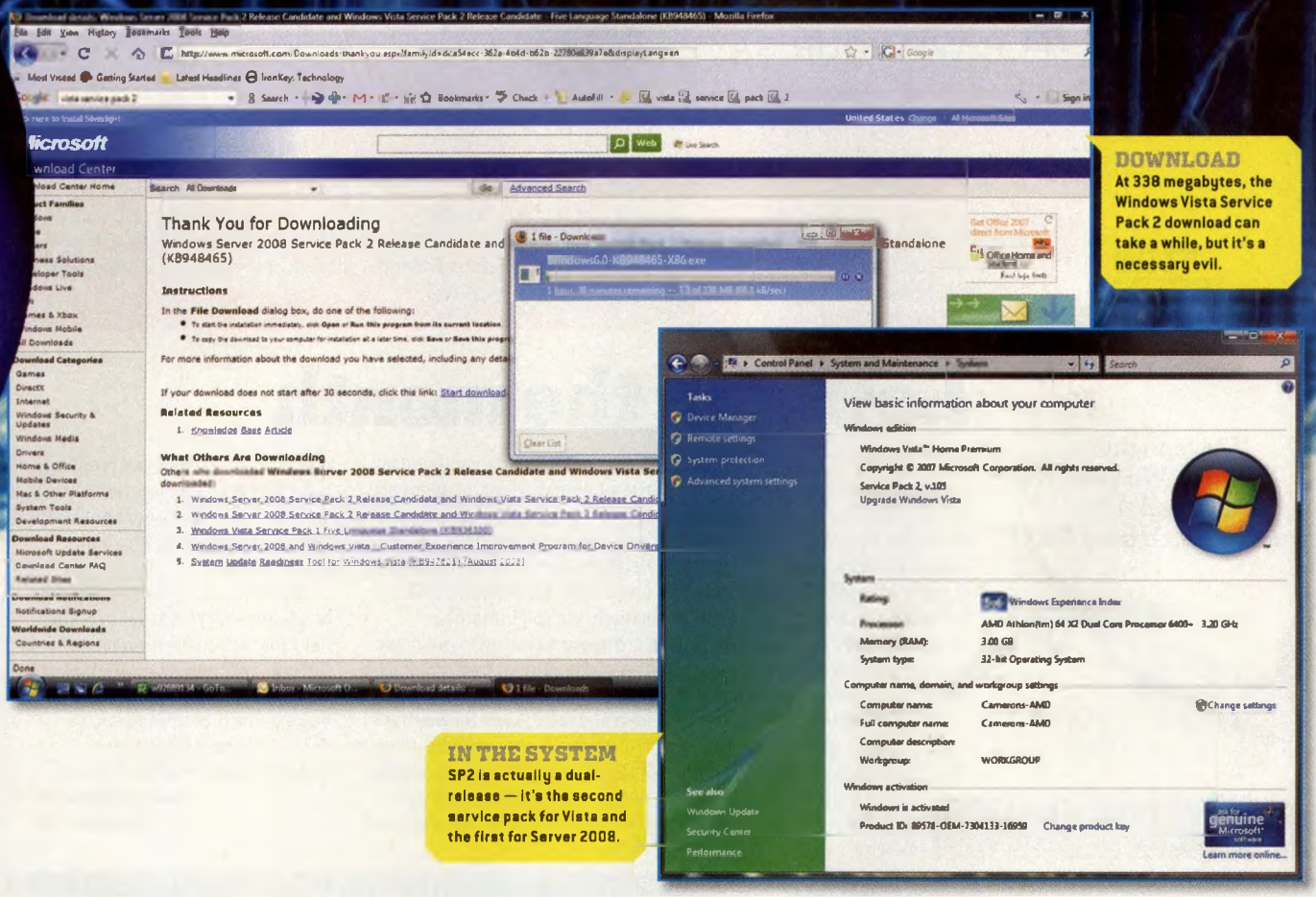
WHAT'S NEW?

Although SP2 doesn't include major new functionality, it does feature a few extra goodies for your Vista system:

- *Native Blu-ray data support.* Using the 'Burn' feature embedded in the Windows Explorer shell, SP2 systems can write to Blu-ray data discs. This doesn't include Blu-ray movie codecs, so you still need third-party software to create and read Blu-ray movies.
- *Windows Search 4.0.* This offers slicker performance and reduced hard drive thrashing on Vista systems and the ability to index EFS-encrypted files. It was released as a standalone package in June 2008 and is also available via Windows Update. It supports Windows XP, Vista, Server 2003/2008 and Windows Home Server.
- *Improved Wireless Functionality.* In April 2008, Microsoft released the Windows Vista Wireless Feature Pack. A post-SP1 package, the pack included certain updates to improve wireless communication on Windows Vista: Bluetooth 2.1, Unified Pairing user interface and Windows Connect Now. The pack was never released on Windows Update, but is available as a standalone installer for Windows Vista SP1 systems, and is now bundled into SP2.
- *exFAT Enhancements.* exFAT, or Extended File Allocation Table or FAT64, is a proprietary file system developed by Microsoft which overcomes the limitations of the older FAT standards but is used in situations where the overhead of NTFS is not appropriate, so it sees a lot of use in flash drives and high-capacity USB keys. exFAT support was introduced in Vista SP1, and the SP2 enhancement means that the time and date stamps can be stored in UTC rather than local time — useful for travellers.
- *64-bit VIA support.* SP2 systems will natively support the new range of 64-bit VIA CPUs. Windows Server 2008 and Vista SP1 could be made to support this architecture with a hotfix (KB949459).
- *Power management.* The default power management profiles which ship with Vista — Balanced, Power Saver and High Performance — have been tweaked to improve battery life. Microsoft's data suggests that with SP2 they are approximately 10% more efficient.
- *Clean-up utility.* SP2 will come with the ability to clean up after itself, removing RTM and SP1 files, which are rendered obsolete by SP2. This will claw back some drive space (useful for netbook users) and can also be used by admins and OEMs to reduce the size of system images.

For Server 2008 administrators, in addition to all the post-SP1 updates, SP2 offers the following features:

- *Hyper-V virtualisation.* This was released in beta form with the RTM build of Server 2008, and the final version has been available for some time via Windows Update.



DOWNLOAD
At 338 megabytes, the Windows Vista Service Pack 2 download can take a while, but it's a necessary evil.

IN THE SYSTEM
SP2 is actually a dual-release — it's the second service pack for Vista and the first for Server 2008.

- *Improved power management.* This client feature is also available on the server platform, as well as the ability to control the enhanced client power management option via Group Policy.
- *Terminal Service compatibility.* Due to changes in the licence key structure for TS, clients using older versions of TS failed to connect to Server 2008. SP2 provides compatibility for these legacy connections.

HOW TO GET IT

As with Vista SP1, SP2 will be made available to the public as an optional update via Windows Update and as larger standalone installers, available for download from Microsoft's web site.

The most bandwidth-efficient method of installation is Windows Update, particularly if you're installing SP2 on an SP1 system that has been fully patched. SP2 will assess how many of the packaged updates your system actually needs and will streamline the download and installation accordingly, saving you time and not killing your monthly download quota. The anticipated size of the update for home users on an SP1 system is around 40-60MB.

If you're looking to upgrade multiple systems, then the standalone installers are for you. They're substantially bigger as they contain all the updates plus multi-language support. The first installer will support the 5 core languages — English, German, French, Spanish and Japanese — and will be available in both x86 and x64 versions (around 300MB and 500MB in size respectively), while the second installer supports all remaining languages (around 400MB and 600MB respectively). The standalone installers are also useful for image builders to integrate into existing image builds.

In the weeks following SP2, Microsoft will release Vista image builds with SP2 already integrated. These will be available for download by TechNet and MSDN subscribers as well as Volume Licence customers. New systems will be shipped with SP2 pre-installed and also built into any supplied recovery media.

For enterprises, IT Pros will be able to control the distribution of SP2 via WSUS and System Center Configuration Manager. If users have the ability to download updates independent of any internal infrastructure, you can deploy the Windows Service Pack Blocker Tool Kit, which prevents systems from accessing service packs via Windows Update. The Kit has been used for XP SP3 and Vista SP1 and is usually valid for 12 months following release of the final build.

TO PATCH OR NOT TO PATCH?

If you like living life on the cutting edge, then of course this is a silly question and no doubt you'll have every machine patched within 12 hours of SP2 being released. If you're of a more cautious bent, is there anything in SP2 that might make you want to sit back and wait?

Given that there isn't a sense of urgency surrounding SP2 there's actually not much incentive to rush out and get patching — it's not going to fix any critical issues and quite a lot of the functionality can be made available on an SP1 system.

Having said that, Microsoft technology does tend to be evolutionary in nature — each new system building on what has come before — so ensuring that you're on the latest OS version is certainly good practise. However, don't look to SP2 for dramatic improvements in system performance — system and synthetics benchmarks using the Release Candidate build suggest that an SP2 system isn't going to be noticeably faster than SP1 for your day-to-day computing or PC gaming. If you're looking for radical changes or if Vista just isn't your OS of choice then you should be looking ahead to Windows 7. But you may as well patch Vista up to SP2 while you wait!

14 epinions
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THIS ISSUE'S WINNER

Steven wins a TP-Link Wireless N Router and Adapter bundle worth over $200.

Letter of the month

UNDERWHELMING GAMES

My expectations were small. I bought a game that my son wanted to play with his uncle over the network, Dawn of War II. I expected the following to occur: 1. Buy a Game DVD. 2. Install the game locally and be able to have him playing a standalone game. I just expected the basics. Install the GAME and PLAY.

Talk about being frustrated and generally underwhelmed by the whole experience. I spent six hours trying to get Dawn of War II installed and functioning, trying to deal with the whole Steamworks and Games for Windows LIVE experience (nightmare).

My son saved up to purchase this game with his own money; he was very excited about the whole idea and really keen for well over two weeks. He bought this game at 4.00pm after school and I still did not have a playable game by 11.00pm. I'm all for copyright and protection of intellectual property, but when the game is locked up and the key hidden under not just one mat but several, why bother with this game?

So thank you THQ, Steamworks and Games for Windows LIVE. You have just saved me a small fortune. I will never buy another of these games or allow my son to buy a game that utilises such a draconian technology that cripples the game experience.

Steven Ballestrin
Watsonia, Vic

Version numbers: when an OS has seen as many new incarnations as Windows, there's bound to be some confusion.

RIGHT VERSION

A comment to David Flynn with his sidebar on 'Why Windows 7?' (*APC* December 2008, page 13).

The first version of the Windows NT (New Technology) line of OSs by Microsoft was version 3.5, not 3.1. The 3.5 was to show that there was 'some' relationship between the old (DOS-based) line and the new NT line. The next version was 3.51, and then the 4-series.

Harry Woodward-Clarke
Woy Woy, NSW

NECESSARY WARNING

In response to Thomas Suters' "Stupid Warning" (*APC* February 2009), while "Press Esc to exit full screen mode" when watching YouTube videos may seem a stupid feature, it is a necessary one.

Imagine you are browsing the internet, you click a link to a friend's Facebook or MySpace profile, for example, when all of a sudden your screen goes black. At this point, whoever wrote the script has complete control of what you see. This is because of a few flaws with Flash's full screen feature: flaws that can't be fixed without eliminating the feature itself.

When you view a web page, the coder has the option of forcing Flash to open something full screen and can display any kind of content. If the "Press Esc to exit full screen mode" message were to be removed, you might know how to quit the full screen feature, but not everyone would.

Brendan Pilcher
Leslie Vale, Tas

ASTRONOMICAL COMBINATIONS

Today I rebuilt an old low-tech laptop. Since it will only ever be used for browsing things like the White Pages, I decided to put XP on it rather than Vista.

When I tried to activate XP I couldn't do it online because the software had been activated too many times. So I phoned the MS Partner Program and got great help (no pun: they were very good!).

They forwarded me to the product registration folk who needed me to enter a 54 digit number into my phone. I am not joking! While the activation software did give me the number, why does it need to be so huge? You could give every person on the planet a unique number and use only 10 digits with billions of unused numbers to spare!

Then to activate the software I was given (by another very helpful guy on the phone) a shorter, way more sensible number to enter into the PC: it was only 48 digits long!

Sounds like the security guys have got the keys to the asylum. It may well be secure, but it is totally absurd. This is not a customer-friendly practice!

Peter Black
Hunters Hill, NSW

TOO GREEN?
Tony Joyce says things aren't as dire as the 'Going Green' article made out (and that technology is getting cleaner all the time).

NOT GREEN ENOUGH

In response to "Going Green" (*APC* March 2009), the heading of that letter should have been "Going Insane Green." If you take the writer's (Stephen Bitmead) line of reasoning, then people who have the audacity to drive cars do so with the express purpose of destroying the planet.

He complains about the impact of PC power supplies on the environment. Why don't we just switch everything off and live in caves? We should forget about fire too; that will pollute the atmosphere. Let's blame Ugg for discovering fire in the first place.

Seriously, though, companies do not design electronic equipment to consume unnecessary amounts of power. The enemy of electronic components is heat. The more energy consumption, the more heat produced. Therefore TVs, power supplies, computers etc., are made as energy efficient as they can possibly be given the technology of the time. In fact, Stephen, if you bothered to do your research, you would notice that power supplies are increasing in efficiency all the time. Disadvantaging people financially will just prevent them from investing in more efficient products. Your ridiculous rant will backfire.

Tony Joyce
Macquarie Fields, NSW

COMPLIMENTS SECTION

I have been a reader of computer mags now for many many years, mainly for specific articles (hardware,software or in-depth How-Tos (*APC* word)).

Late in 2008 I had a browse through an *APC* mag and found the experience absolutely delightful. Clear concise articles and everything else I specifically require in magazine elements. I bought a couple of mags back in the early '80s where (on reflection) I think the mag was targeted for individuals of the computer genre, so consequently were of no interest.

Now I have found a mag to call 'Home.' About the subject heading: Your "CONTACT AUSTRALIAN PERSONAL COMPUTER MAGAZINE" lists a set of queries for emails. I believe there needs to be one more. A COMPLIMENTS SECTION.

Jim Longmuir
Benalla, Vic

TOO MANY ADS

I have been a subscriber of this magazine for well over two years now. It does provide great technical material. However, I have noticed that the number of ads has been steadily increasing especially towards the back. Can we put these ads online or can we decrease their size so that they take up a much smaller area? I hate feeling that my money is buying ads that I get in the post for free.

Karl Nasri
Sydney, NSW

Editor replies: Although we appreciate that you enjoy our editorial so much, advertisements are a critical part of our offering as they are generally, of any publication. In fact research shows many readers buy the magazine partly because of the advertisements. Ads will continue to feature in APC, and hopefully you will find one with products that are of interest to you.

NEHALEM SCHMEHALEM

In the March '09 issue, while introducing the Phenom II and comparing its performance with it's Intel counterparts, you mentioned the 'Core i7' system's architecture as 'Nehalem'. This is not completely correct. It's Core architecture is indeed Nehalem but the actual 'Core i7' chip's 'codename' is Bloomfield.

If you wanted to list the core architecture's name as the name of the test system then the 'Core 2 Extreme' system should be known as the 'Core' test system, as the name of the Core 2 architecture is 'Core'. So basically, Nehalem is to Bloomfield, as Core is to Yorkfield XE. Bloomfield is to Core i7, as Yorkfield XE is to Core 2 Extreme.

Thanks for listening to my psychotic rant anyway.

Barton Ip
Marsfield NSW

apc

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enduser

FROM THE READERS OF APC

apcenduser@acpmagazines.com.au

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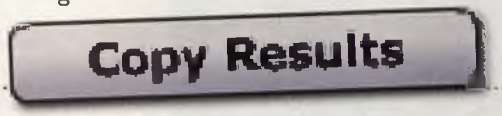
Now hit the button

David Field of Port Macquarie, NSW, is a support technician for a mid-sized ISP. A customer was complaining of speed issues on his ADSL connection, so Field directed him to the ISP's in-house speedtest web page to get some quantifiable results before a line fault notice was lodged with Telstra.



"I asked the customer to go to the page and run the test three times and copy the results into an email for us," Field says. "On our web speedtest page is a Copy Results button that copies the results to the clipboard, enabling the customer to paste the results into an email.

"My customer sent me three emails all with a nice copy of the Copy Results button. It was not quite what I was expecting."

IMAGE AND REALITY

Dale Rodgie runs a web design business in which he sells web hosting. He created a web-based help page with step-by-step instructions showing his customers how to set up spam handling on their Outook clients. A customer who was trying to follow the instructions emailed Rodgie saying "Cannot move past the cursor set in the tools menu in the first step."

So Rodgie rang him, wanting to make sure he was actually using Outlook. "It took about ten minutes to find out if he was using Outlook and what version it was. When we finally worked out it was Outlook 2002 I asked him to click on the Tools menu and click on Rules and Alerts. He said nothing happened when he clicked on the menu option.

"Then it dawned on me. When he tried to follow the instructions, he was clicking on the screen shots in the instructions on the help page.

"Needless to say, I was not able to fix his problem over the phone."

JUST RING US

It's not always end users whose antennas don't pick up all the channels. Sometimes, IT companies fall short. Gordon Drennan wrote an email to iiNet support: "I'm emailing you because my ADSL connection is still working but my phone doesn't work."

iiNet support replied: "Thank you for your email... please perform the following checks to isolate whether it's the phone or the line... and if you are still unable to identify the problem or have any further questions, please ring us on 13 22 28."

WRONG COMPUTER

Conrad Smith has been in IT support in a professional capacity for about 14 years, longer if you count the years providing IT support to school teachers. "I think a good sense of humour is one qualification left out of the job description at times."

Smith recently installed a new computer for a customer. A week later he got a phone call.

"Good morning, Conrad. I have a problem with the new computer you set up last week. The old one is working fine, but the new one just has a blank screen, no matter what I do with the keyboard and mouse."

Smith asked him, "Well, does the computer under the desk have a blue light on it?" Needless to say, the customer had not switched the PC on. Seriously, can an end user get any dumber than forgetting to switch the PC on?

WRITE WRONG

The similar sounding words Right and Write get a lot of people into trouble. A technically savvy Queensland Year 6 school student (who asked us to withhold his name) says his teachers often get him to show other students how to do things with computers. "So I got sent up to another year 6 class, to show the teacher and her class how to use Adobe Fireworks," the student says. "So I show the class and everyone seems to understand; the teacher even wrote down everything I did.

"Two days later I get sent back up to the class and the teacher tells me that the instructions I gave the class were wrong. I had a look at them and every time I said 'right-click' she had actually written 'click'!"

WINNERS GET THIS

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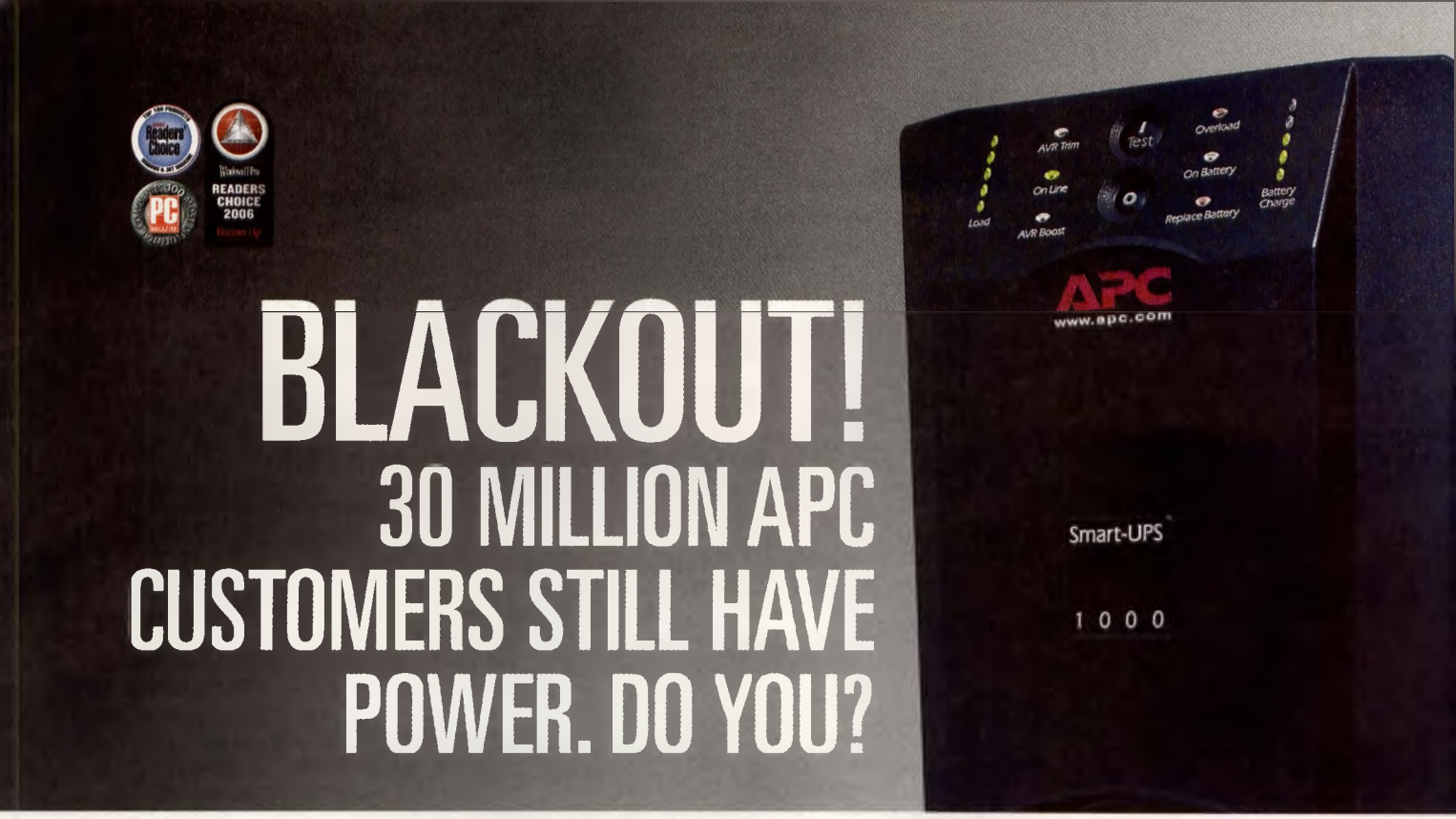

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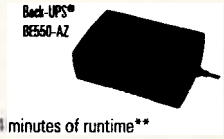

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watchdog

KEEPING AN EYE ON VENDORS!

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Font fiasco

How responsible for replacing software lost in a computer crash is a software vendor?

We often receive emails from readers who've lost software in a computer crash and expect the vendor to resupply it. In many cases, providing a valid product key and proof of purchase will get you a replacement, which may also involve a fee. But there are many shady areas, such as losing fonts and expecting them to be replaced.

Our counterpart magazine in the UK, *PC Plus*, received a complaint from a reader who lost some fonts and expected Adobe to replace them. Since we often get this type of enquiry, we reprint the outcome here:

"I'm a sole trader and long-time user of Adobe Creative Suite 1.3. My computer has 2GB of RAM: one bank apparently went wild and wiped out Windows, necessitating repairs plus the re-installation from scratch of Windows and all my software. The disruption was bad enough, although I had at least kept all my data on a separate disk, so it could have been worse. I did however lose my font collection. One of these was a bonus gift from Adobe for registering CS1.3 and had been used for two years as the main font for a community paper.

"The missing font is Brioso Pro Opticals from Adobe. On contacting Adobe I was told there was no way they would allow me to download it again; I would have to purchase it from them. I then asked what bonus font I would receive if I upgraded to a later version of CS. I was then assured by the Adobe agent that I would receive the Brioso font so I paid to upgrade and then sent an email to confirm that this purchase was conditional on me receiving the font I wanted.

"I received CS3.0 and, after installing, I registered the software, and was offered a totally different font. I immediately phoned Adobe and spoke to another agent who checked the logs and confirmed I had been promised Brioso Pro but explained that the agent had been mistaken, as Brioso Pro is now the bonus for US customers only. He also confirmed they had received my email. He said he couldn't authorise the download but would pass the information to a level 2 agent and I should get an answer in a day or two.

"I have now spoken to many Adobe agents who all assure me the matter is being dealt with at a 'higher level'. Please, can you get Adobe to fulfil its contractual obligations?"

Firstly, what you do with your data is your own affair and Adobe is under no obligation to resupply a font that had been lost — try that excuse on iTunes and see how far you get! Clearly Peter ought to have had such an important font backed up securely. However, Adobe concluded a deal with Peter that did include the supply of this specific font as a bonus and by failing to supply it is quite clearly in breach. An Adobe spokesperson provided Watchdog with this response: "Customers are extremely important to us and it is with regret we hear that Mr McRobert does not feel he received our usual high level of service. We take the views and concerns of our customers very seriously and in regards to this case we have taken steps to remedy the situation for which Mr McRobert is very satisfied with." To decode what Adobe meant in its response we contacted Peter. He replied:

Brioso Pro Opticals
The quick brown fox j
The quick brown fox ju
The quick brown fox ju
The quick brown fox jum
The quick brown fox ju
The quick brown fox jum
The quick brown fox jump

FONT BONUS MIX-UP
Fonts can be eye-wateringly expensive — so it pays to have them backed up, as Peter McRobert soon discovered when some of his fonts went missing.

"After four weeks of getting the run-around, I got a call from a 'senior agent' who asked some pointless questions and then told me she had decided to 'condone' the issue of the font. Yesterday a man in support phoned to say he was sending the font and this morning it has finally arrived."

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PRODUCT REVIEWS & COMPARISONS

LIAN LI P2010

Here at *APC* we get excited when things do their job properly, with a minimum of fuss. Sure, some folks like fancy LED light shows, endless buttons, gizmos and geegaws to keep you entertained, but there is something ultimately satisfying about a product that is designed and implemented well without the unnecessary flair. It's craftsmanship vs mass appeal. Cases from Lian Li are generally a great example.

SETUP ✪✪✪✪✪

For a case, performance is rated in three ways; how easy it is to work in, the air flow and cooling capabilities and how much it can reasonably fit. The P2010 is a great example of a case that nails all three. There's heaps of upgrade space, it's roomy and clear while separated cooling zones keep your hardware aired.

SETUP ✪✪

Unfortunately, Lian Li also has a reputation for very, very expensive cases, and the P2010 is no exception. At a hair under $600, you can easily pick up two or three 'just-as-good' cases without that Lian Li logo. We expect to pay it, but we can't really justify it.

SETUP ✪✪✪✪

The Lian Li P2010's design and implementation is excellent. There's plenty of room to wiggle around in, and the build has the company's usual high quality in spades. Rounded edges for finger safety and clear, clean cuts and well fitting parts. Lovely.

LABS ROUND-UP

iPOD YOUR HOME

Throw away your headphones and start a party! This month we take a look at iPod sound systems for every budget.

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Seeing double? The W700ds packs a nifty surprise in the form of a second display.

8/10

Lenovo ThinkPad W700ds

A notebook that bucks the trend in more ways than one.

Lenovo
www.lenovo.com.au
$7,500

Graphics tablet; second screen. ✔
Heavy; small trackpad. ✖

SPECIAL FEATURES
Secondary display
Dedicated number pad
Core 2 Duo

While most of the notebook market has shifted to the burgeoning netbook form factor, Lenovo has bucked the trend with the W700ds. This 3.8kg behemoth, with its 17in screen and full keyboard including a dedicated numeric keypad, is a desktop replacement. More than that, it builds on the ThinkPad tradition of innovation with the industry's first dual-screen notebook display. Hiding behind the display is a secondary 10.6in screen.

As you'd expect from a notebook at this price, the spec sheet reads impressively. The default CPU, an Intel Core 2 Duo processor T9600 clocked at 2.8GHz, delivers plenty of grunt but for those seeking heavy duty computational grunt this can be upgraded all the way to an Intel Core 2 Quad Core Extreme processor QX9300 running at 2.53GHz. The default complement of 2GB of memory can be upgraded to 8GB. Storage starts with a 200GB 7,200RPM disk but can be expanded to accommodate a pair of 320GB disks in either RAID1 or RAID0. Maxing out the CPU, RAM and disk will add about $3,700 to the cost.

Rather than evaluating the W700ds as a notebook, we saw it as a portable, foldaway desktop workstation. The keyboard had good feel but we found that the trackpad was too small. Getting the mouse pointer across the 1,920 x 1,200 screen took several swipes of the trackpad. However, Lenovo includes a second pointing device, the TrackPoint, between the G, H and B keys. While this is helpful we still found usability hindered and an external mouse, either using one of the four USB ports or Bluetooth, significantly improved usability.

Day-to-day tasks such as working with office documents felt slick, with applications responding rapidly. However, the real power of the W700ds is its focus on creative professionals: a group that Lenovo is unashamedly targeting. To that end, the W700ds boasts an integrated WACOM digitiser, colour calibration software and a FireWire 400 interface.

The digitiser can be used as an input device as well as with applications such as Photoshop for touching up images. It was responsive and the stylus felt comfortable to use. Benchmark performance, using PCMark Vantage delivered a result of 5,104 — 20% faster than most gaming notebooks highlighting that the W700ds is no slouch.

For a graphics pro, the ability to use the main display for the image being worked on, the secondary screen for toolbars and the tablet for image manipulation makes the W700ds a compelling choice. Connectivity's covered with 802.11n Wi-Fi, Gigabit Ethernet or using a 3G modem in a USB port or the ExpressCard slot.

Rounding out the W700ds, our review unit shipped with a Blu-ray drive that was coupled with WinDVD, and the integrated speaker system delivered great sound. There's also an integrated webcam, fingerprint scanner for biometric security and plenty of options for an external display with VGA, DVI and DisplayPort.

All up, the dual-screens, integrated graphic tablet and desktop-like specs pitch the W700ds to pros looking for a heavy-duty portable workstation.

Anthony Caruana

APC MAGAZINE HIGHLY RECOMMENDED

8/10

Panasonic Toughbook CF-52 Mk II

A notebook that survives a chucking.

Panasonic
www.panasonic.com.au
$2,999

✔ Extra long battery life; ruggedised design looks like it can take a beating.

✖ Small touchpad; handle can get in the way when typing.

SPECIAL FEATURES
Magnesium alloy casing
Moisture and dust-resistant
Survives falls up to 76cm

When the going gets tough... well, enough of that. The Panasonic Toughbook CF-52 Mk II is a "semi-rugged" notebook computer, designed to be more resistant to outdoor conditions. With an IDC report stating that over a 4-year IT lifespan 25% of standard products need replacing, versus only 1.5% of ruggedised products, we can see why there is a demand for these kinds of products.

The CF-52 has a number of features to keep it in one piece in tough times: it's housed in a magnesium alloy casing (with a nifty built-in handle), is moisture and dust-resistant, with external ports physically blocked by rubber plugs until you need them, a shock-mounted HDD and reassurance that it'll survive falls up to 76cm.

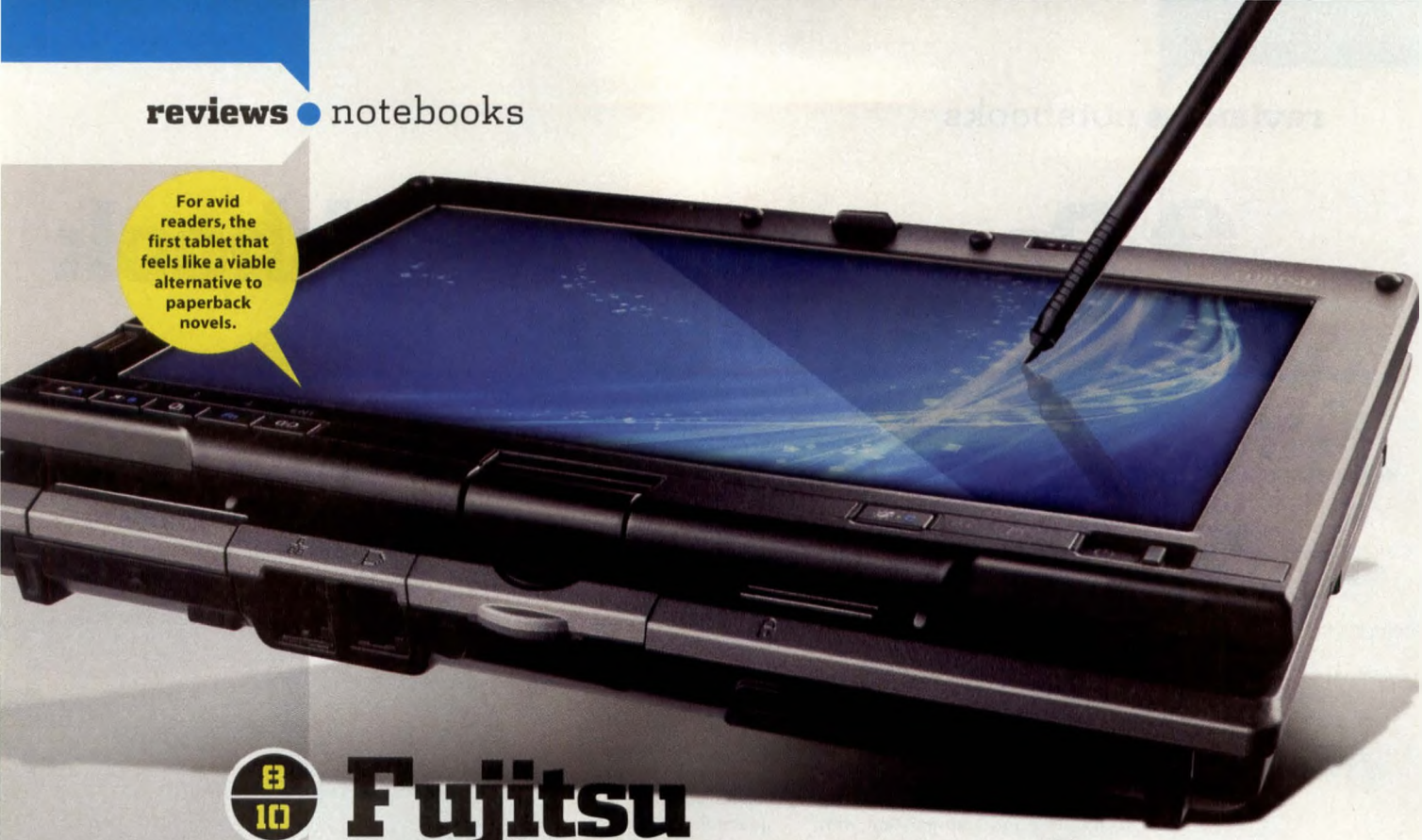
Beyond the rugged exterior it's a fairly typical 15in business notebook. It's built around a Core 2 Duo E8400, on a GM45 chipset with 1GB of RAM and a 160GB (removable) hard disk drive. There's Bluetooth, 802.11N Wi-Fi, a modem and a Gigabit Ethernet port. There's a huge 9-cell 7,800mAh battery that claims a 7.5-hour battery life to keep you working on the road, plus a PC Card slot for an aftermarket wireless broadband card. And the whole package is only 3.4kg.

We threw it through some of our usual tests, with the notebook scoring a middle-of-the-road 4,251 in PCMark05. Battery testing is where it really got interesting. The CF-52 MK II powered through our test for a whopping five hours and 20 minutes of battery life with Wi-Fi on. Nothing to sneeze at there, considering the relatively low 3.4kg weight, and no fancy pay-extra battery pack.

It makes a lot of sense, if you're equipping a team of outdoor workers, or even employees who travel. Of course, they're not indestructible, but if you avoid one or two broken screen hinges or sopping wet keyboards then you're already ahead.

Nick Race

Built tough and to last, these ruggedised notebooks could save you money in the long term.



8/10

Fujitsu P1630 LifeBook

The only thing heavy about this notebook is its pricetag.

Fujitsu
www.lifebook.com.au
$3,959

Ultra-small at under 1kg; handles most duties; features; battery life. ✔

Expensive; not pretty enough for the Gucci crowd. ✖

SPECIAL FEATURES
Sub-1kg weight
Swivel screen
1.2GHz SU9300 CPU

APC MAGAZINE HIGHLY RECOMMENDED apc

When viewed as a geeky gadget showing off the latest in miniaturisation, the new Fujitsu LifeBook P1630 is an impressive little piece of computing power. The same size as a large novel and weighing just under a kilo, this ultra-portable notebook packs an unprecedented amount of power and functionality within its demure chassis. But does the fact that it looks like it came straight from the Skynet labs make it a great notebook in the real world?

The P1630 is quite a nerdy, techie-looking piece of hardware, thanks to the abundance of gadgets festooning the rugged case. Fingerprint scanner, webcam, built-in microphone; this miniscule creation includes all of the features found on its bigger relatives. The screen rotates 180 degrees thanks to a sturdy swivel mount, turning it into a tablet. We much preferred using it this way, as the shrunken keyboard is quite fiddly to use. Having said that, with a bit of practice most users will soon be bashing out speedy tomes like a courtroom stenographer. The touch-screen is pleasingly accurate: a welcome change from many of the other tablets we've seen. However, it's got an outdoor trans-reflective screen, which makes the 1,280 x 768 screen feel like a lower resolution than it actually is. This issue isn't a deal breaker though; reading web sites with the screen in tablet mode is very easy on the eye. Combined with the tiny size, this is the first tablet that feels like a viable alternative to paperback novels for avid readers. The six hour battery life helps back this up.

Obviously there's no optical drive included in a notebook this size, but that's about the only feature missing. The 1.2GHz Core 2 Duo SU9300 processor churns through Vista Business with ease, helped along by a comfortable 2GB of DDR 667 memory. This is quite a surprising result considering the lower frequency of the CPU. It's even more surprising considering the glut of bloatware that arrived preinstalled on our review unit; savvy users will do a clean OS install out of the box.

As a multimedia machine, the Intel 4500MHD graphics chipset buried within isn't going to set any benchmarking records but plays DivX files without a hitch. The built-in speakers aren't festooned with fancy Bang & Olufsen labels but do the job ably for basic PowerPoint duties. You'll need a pair of headphones for longer movie viewing sessions. The 120GB hard drive is spacious enough for 30 hours of your favourite DivX movies, and its SATA150 interface helps keep the P1630 responsive when cycling through extensive lists of MP3s or films. One thing we did notice when playing movies is that it appears this notebook is passively cooled, probably due to the small size. Within minutes of firing up *Wanted*, our laps were noticeably warmer, and it wasn't due to the starring role of Angelina Jolie.

After spending some quality time with this notebook, we're suitably impressed at just how much Fujitsu has crammed into such a tiny package. But it comes at a price: the price. At just under four grand for the 3G-equipped version ($3,500 if you've got your own broadband dongle) this has possibly the highest weight to dollar ratio we've ever seen in a notebook. Yet for cashed-up IT gurus who need the smallest possible computer without sacrificing too many features, we reckon the P1630 is a worthy addition to any geek's gadget collection.

Bennett Ring

7/10 Portege R600

Fully featured and still weighs less than most netbooks.

Toshiba
www.toshiba.com.au
$3,300 (200GB HDD)
$4,125 (128GB SSD)

✔ Small and lightweight, but still performs well.

✖ Flimsy build; price.

SPECIAL FEATURES
Sub-1kg weight
3GB RAM
1.4GHz Core 2 Duo CPU

Since the release of the MacBook Air, everyone has been trying to build stylish lightweight ultra-portables that don't compromise on performance. In this regard, the Toshiba Portege R600 is largely successful.

We were amazed with how light it is. Weighing under 1kg, it is lighter than most netbooks, yet it packs a full computing punch with 3GB of RAM and a 1.4GHz Core 2 Duo processor. This is more than enough grunt to run the installed Windows Vista Business effortlessly.

The unit has an external VGA monitor, a combination eSATA/USB socket, audio connectors and multiple USB ports. There's also an Ethernet port, DVD burner and a switch to enable or disable wireless networking and Bluetooth. Toshiba also managed to cram an SD card slot above the drive and a full-size ExpressCard slot under the drive. Not bad when you consider the notebook is around 19.5mm thick.

The bottom of the machine has more ventilation slots and the connector for the optional mini port replicator. Whilst Toshiba have crammed a lot of expansion ports onto the R600, what is missing is a slot for a 3G/HSPA modem and an HDMI connector.

The 12.1in screen has a non-reflective coating that allows you to easily use the machine in a well lit environment. The 1,280 x 800 screen resolution is standard and characters and graphics are readable. The main problem is that the brightness is noticeably uneven with the top and edges brighter than the rest and the screen has a very narrow viewing angle. The other serious problem with the screen is that it is extremely flimsy. The notebook lid is very thin and not well reinforced, which is concerning.

The keyboard needs to be compact to fit into the small form factor but Toshiba have done a reasonable job of disguising this limitation. The keys are well spaced and large enough for you to easily use the keyboard.

Unfortunately we cannot say the same thing about the touchpad. Toshiba decided to 'texture' the touchpad so it feels as if you're running your fingers over sandpaper. Its responsiveness is fine, but the buttons are recessed so you need to press quite hard.

At the top of the screen is a 1.3MP web cam and microphone. The built-in speaker on the Portege R600 is abysmal. Even with the volume at maximum, it barely puts out enough sound.

Toshiba claim a battery life of up to eight hours but in our tests its three hours didn't even come close.

Overall, you are getting a full spec'd Vista-capable machine that weighs less than a netbook. However, you are paying a hefty premium.

David Neiger

Textured touchpads: we weren't a fan of this tactile approach.

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Windows Vista
Home Premium
Microsoft
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Uber-stylish for sure, but performance and price leave a lot to be desired.

Sony VAIO VGN-P15G

Care to fit a mediocre product in your pocket?

Sony
www.sony.com.au
$2,299

Ultra-compact; stylish; instant-on Linux mode. ✔

Frustratingly slow; limited battery life; expensive. ✖

SPECIAL FEATURES *i*
1.6GHz Z530 CPU
245 x 120 x 19.8mm
594g weight

With the steady stream of high-tech toys that comes through the Labs, devices that really turn our heads are few and far between. The Sony VAIO P is one of them. Even after seeing photos of it, we weren't prepared for how tiny it is. The diminutive VAIO P measures 245 x 120 x 19.8mm (the equivalent of four iPhones laid side-by-side) and weighs an amazingly-light 594g. It's also very stylish, with a glossy hand-polished case and contrasting silver keyboard.

Compared to a netbook, it's the same width but roughly 2cm shorter. Technically, this means you can tuck it into your back pocket (Sony even goes so far as to call it a 'Pocket-style PC') but we wouldn't recommend it. We could just squeeze the VAIO P into a loose pair of jeans, but it felt hard and uncomfortable to walk around with.

The extra wide dimensions allow for a keyboard that falls somewhere between the 7in and 9-10in netbooks in size. It's cramped, but the keys are large enough to rest your fingers on, and it wasn't long before we were able to touch type at full speed. The shorter base means there's no room for a touchpad; instead, there's a track pointer on the keyboard and mouse buttons along the edge. The sides house two USB 2.0 ports, Memory Stick and SD card slots, and a port for connecting the supplied VGA and Gigabit Ethernet port adapter. On the wireless front, it offers 802.11a/g/Draft-N and Bluetooth 2.1 + EDR.

Sony has managed to shoehorn an 8in display in by making it extra wide, running an exceptionally high 1,600 x 768 resolution. It sounds good in theory, but since everything on the screen is so small, it's an eyestrain to use after a few minutes. There's a shortcut button for tiling open windows side by side, not unlike the Expose feature in Mac OS X, but it's nowhere near as fluid or graceful; with four windows open, it took half a minute to arrange them into quadrants. The screen's saving grace is the zoom function that lets you magnify sites and Word documents to make them easier to read.

A number of features make the VAIO P appealing as a portable media player: a Linux mode for playing music, videos and photos (as well as surf the web and chat) without booting into Windows, VAIO Media Plus for accessing local content and files on DLNA-compatible network devices, and a 64GB solid state drive. Both modes use the same intuitive Xross Media Bar interface found on the PlayStation 3, but they're slow to launch: the 'instant-on' mode is anything but, taking 20 seconds to start (although it's still preferable to the two-minute boot time for Vista), and VAIO Media Plus takes even longer. Video playback is also disappointing: streamed from YouTube or played locally, it's too choppy at full screen to be watchable.

Poor performance and weak battery life are the VAIO P's main shortcomings. The 1.6GHz Intel Atom Z530 processor and Intel GMA 500 graphics aren't gutsy enough to take on Vista and drive the high-res screen without serious lag, even with the 2GB of RAM soldered to the motherboard. The 2100mAh battery is rated for three hours, but we only got two hours and 20 minutes with Wi-Fi on.

The VAIO P's ultra-portable form factor makes it extremely appealing as a go-anywhere PC, but given the choice, we'd happily use a netbook for web browsing and mobile working instead. Sure, they're twice as heavy, but performance is tolerable, battery life is a reasonable 4-5 hours, and they're less than a third of the price of the VAIO P.

Jenneth Orantia

Easy to watch: the C905's 2.4in screen is gorgeous to look at.

8/10

Sony Ericcson Cybershot C905

Sony Ericcson has taken the lead.

Sony Ericsson
www.sonyericsson.com.au
$1,149

Spacious keyboard; hi-res screen; intuitive user interface; snappy performance.

Poor camera; short battery life; bulky and heavy.

SPECIAL FEATURES
8.1MP sensor
Xenon flash
Face detection

The C905 is the flagship model of Sony Ericsson's Cyber-shot range, boasting an 8.1MP sensor, Xenon flash, and a few advanced features like face detection, image stabilisation, and smart contrast. As it runs Sony Ericsson's proprietary operating system, it's not a smartphone in the strictest sense, but it shares many of the same functions like HSDPA, Wi-Fi and A-GPS.

Traditionalists will appreciate the C905's conservative design, which forgoes a touchscreen and other fancy input mechanisms in favour of a sensible slider design and mechanical keypad. In the same vein, its plain black casing won't turn any heads, and it's quite a chunky little beast, especially compared to its predecessor, the C902.

The navigation controller (which consists of a thin metal rectangle) is uncomfortable to use for extended periods, and the buttons on the front and keypad are stiff and hard to press. Also, the flimsy sliding mechanism on the lens cover doesn't fill us with inspiration.

On the upside, the C905's 2.4in screen is gorgeous to look at. At that size, the QVGA resolution still looks sharp, and images pop off the screen. Unlike the lens cover, the slider for the keypad feels smooth and sturdy.

There's really only one reason that you'd buy the Sony Ericsson C905 over any another phone, and that's for its industry-leading 8MP camera. It's quick to start up when you press the camera launcher button (although you'll have to manually slide the lens cover down if it isn't already open), and it's also fast when it comes to auto-focus, shutter speed and image processing. There are seven scene modes on offer, and you can adjust the white balance and exposure.

What really surprised us was how good the C905 is at taking photos in less than optimal lighting conditions. The dual LED and Xenon flashes are considerably more powerful than the solitary LED 'photo lights' found on most mobile phones, and it's strong enough to light up a dark room without blowing out the colours.

Outside of digital photography, the C905 is fairly average. It passes as a half-decent portable media player thanks to the inclusion of Sony's excellent XMB media interface, but there aren't any dedicated media buttons for changing tracks when the program isn't active. It also uses Sony's proprietary connector for the audio jack, with no adapter included for plugging in your own headphones. Also on board are a basic web browser and email client, but we emphasise the word 'basic' here.

Overall, we were happy with the C905's performance. Calls sound crystal clear and we were able to get good 3G and HSDPA reception everywhere we used it. As far as system speed goes, it was a little laggy, but battery life was respectable: with medium usage, we were getting around two days between charges.

Jenneth Orantia

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Samsung INNOV8

It's no beauty, but it sure is feature-packed.

Samsung
www.samsung.com.au
$899

8MP camera; internal storage; lots of pre-installed software. ✔

Chunky; doesn't play XviD videos; weak camera flash. ✖

SPECIAL FEATURES
8MP camera
HSDPA, Wi-Fi, A-GPS, Bluetooth
16GB flash memory

On a strict spec-by-spec comparison, the INNOV8 has more features than any other smartphone on the market. It's got the usual HSDPA, Wi-Fi, A-GPS and Bluetooth, and it also packs in an 8MP camera, 16GB flash drive, microSD expansion, an FM radio, TV out, DivX, and the widely used Symbian 9.0 Series 60 v3.2 OS.

To say the INNOV8 is chunky would be putting it mildly; it's the beefiest slider phone we've come across in a while, weighing a pocket-dragging 136g and measuring 17.2mm thick. Flip the INNOV8 over, though, and it's obvious it joins rank with the latest 8MP camera phones. Samsung has done a good job of making it look like a standalone point-and-shoot camera. In good lighting conditions, the INNOV8's camera is superb, producing bright and true-to-life colours, sharp focus and excellent exposure.

The INNOV8 uses the WebKit-based browser and Messaging email client, which is good news for web browsing and not so good for email. All the pages we threw at it rendered quickly and accurately. The Messaging client supports POP and IMAP email accounts and can open most attachment types, but that's where the frills end.

The INNOV8 has all the ingredients for a rich multimedia experience: dedicated launcher keys for the music and movie apps, a sizeable 16GB of flash storage (with the ability to add up to an extra 16GB via microSD card), support for a wide range of video and audio codecs, a 3.5mm audio jack and 3D virtual surround sound speakers.

The 2.8in screen has a 240 x 320 resolution which we thought was a tad small compared to competitors.

With quad-band GSM and dual-band UMTS radio stacks, you shouldn't have any problems getting reception. Our Vodafone review unit kept a steady 3G signal and we found call quality was generally good. We found battery life good for around a day's worth of mid to heavy use, which is something to be aware of.

Jenneth Orantia

HTC Touch HD

Contrary to its name, there's no actual high-def.

HTC
www.htc.com/au
$1,499

Large high-resolution screen; snappy system performance. ✔

Fiddly text input; limited multimedia capabilities; lots of links to Telstra services. ✖

SPECIAL FEATURES
480 x 800 WVGA
5MP camera
3.8in touchscreen

The HTC Touch HD has a bit of a hi-def telly look and feel to it, with its flush mirrored front, extra-large 3.8in WVGA display and piano black casing. Its overall footprint is slightly smaller and thinner than the iPhone 3G. Keeping with the Touch HD's sleek profile, there aren't any buttons sticking out on the front or sides; the power and volume buttons are thin slivers that are only slightly raised from the phone's casing, and the four touch-sensitive buttons below the display are flush with the front. The 480 x 800 WVGA resolution is the best currently available.

For a phone that's meant to be 'inspired by the ultimate cinematic experience', it's a bit of a let-down that music and video playback has been relegated to the clumsy Windows Media Player 10 Mobile program. The Touch HD is the first HTC phone we've seen with a five-megapixel camera, but it's nothing to write home about: HTC doesn't even bother with a shortcut button.

The Touch HD supports push synchronisation with Exchange for email, appointments, contacts and tasks, and it also syncs it with Outlook on a desktop. The robust email client also works with POP and IMAP accounts, supports rich text and HTML display, and can open most attachments, including PDFs and Microsoft Office files.

We didn't have any qualms with system performance: menus and programs opened quickly, and there wasn't any lag when we had a few programs open at the same time.

Given the large screen size and fast processor, we weren't expecting more than a day of battery life from the 1350mAh Lithium-ion Polymer battery, but it surprised us with one-and-a-half to two days of run-time with medium usage: seven hours talk time/450 hours standby.

Jenneth Orantia

Multimedia mavens will enjoy the N85's plentiful music and movie apps and gorgeous OLED screen.

Lots to like: a 3.5mm audio jack, dedicated multimedia keys, and a bundled 8GB microSD card.

8/10

Nokia N85

A smartphone with good multimedia support.

Nokia
www.nokia.com.au
$919

Compact size; gorgeous OLED screen; good multimedia performance.

Buggy firmware; mediocre battery life; weak LED flash.

SPECIAL FEATURES
2.6in OLED display
microUSB charger
3.5mm audio jack

APC MAGAZINE HIGHLY RECOMMENDED

For a high-end everything-but-the-kitchen-sink smartphone, the N85 looks remarkably like a regular mobile. Its gloss-black front has the same style of buttons we've seen on previous Nokia handsets, and while the copper backplate with wave pattern is a nice change from the standard-issue black, there's really not a whole lot to get excited about.

That is, until you power it up. The N85 uses an OLED display, and the difference between that and a standard TFT LCD is stunning. Colours literally pop off the 2.6in display, and as it doesn't need a backlight, it's less of a drain on the battery.

Nokia is one of the companies backing a single charging standard for mobile phones (microUSB), and the N85 is the first Nokia we've seen that uses it. Thankfully, this standard doesn't extend to the audio jack, and the N85 comes with a regular 3.5mm audio jack on the top. Other buttons and slots include the hot-swappable microSD reader on the left, power button and microUSB port on the top and volume controls, key lock and camera shutter button on the right.

Navigating through the N85's menu is done via the five-way controller and two soft keys immediately below the screen. The main menu uses a 4 x 3 grid of icons that requires a minimal learning curve to master, and you can hit the red call button any time to return back to the standby screen.

The N85 covers most of the bases that you'd expect on a high-end smartphone. There's a unified Messaging application that combines SMS, MMS and email, a web browser, PIM applications, PDF and Microsoft Office viewers, and lots of multimedia software for photos, music and videos. That said, we found ourselves having to download lots of extra software to get the smartphone functionality that we're used to on other phones.

The five-megapixel camera uses the same excellent software found on the N96, but it doesn't offer much beyond scene modes, a timer and burst photography. It takes decent shots in good lighting, thanks to its Carl Zeiss Tessar lens, but once the sun goes, the weak dual LED flash results in noisy and blurry photos.

The N85 works well enough as a compact all-rounder, but its performance falls short in a few areas. The firmware has a bug that occasionally causes some of the icons on the Standby screen and Main Menu to appear wonky, and the system restarted a couple of times during testing. It's also a little laggy when opening applications and some web pages, which we put down to its relatively underpowered 369MHz ARM 11 processor. Call quality is excellent, except when it comes to using the speakerphone: callers complained that they couldn't hear us properly. Also, we noticed that the signal would waver between 3G and 3.5G while in the same spot: a problem that we haven't noticed on other phones.

The N85 may look like a regular mobile, but it doesn't have the camel-like battery life of one. The 1,200mAh Li-ion battery is good for around a day and a half of medium usage, but during one particularly rigorous day of testing, it ran out of juice before the day was over.

If you want a smarter mobile without the overhead and complicated input mechanisms of a standard smartphone, the compact N85 is a compelling option.

Jenneth Orantia

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Open: Mon-Thur: 9am to 6pm, Fri: 9am to 5.30pm
Sat: 9am to 3pm, Sunday and Public Holidays: Closed

8/10

Enspire Lightspeed X58

A well-specced performance beast.

Enspire Digital
www.enspiredigital.com.au
$3,722

Very fast; quiet; looks good.

Bit pricey.

SPECIAL FEATURES
3.66GHz Core i7 920
3 x 2GB DDR3 RAM
120GB OCZ Core Series 2 SSD

The system uses Antec's P182 case, which is a great choice. It's a large midi tower clad in aluminium with black plastic trim. The front has a door, which protects the drive bays and it is a very-stylish, monolithic beast. Inside is a 2.66GHz Core i7 920 overclocked to 3.66GHz. It's air cooled using a large, Thermalright Ultra-120 Extreme heatsink with 120mm fan attached. With this are three sticks of Kingston 2GB DDR3 RAM, running in triple channel. There's also a 120GB OCZ Core Series 2 solid-state hard disk for speed and a 1TB WD standard hard disk for storage. It's all thermally very efficient, and despite containing several fans makes only a light swooshing sound.

Despite it being based upon Intel's lowest-powered Core i7 chip it scored a massive 7,995 in PCMark Vantage. For a PC that costs under $4,000 that's highly-impressive, top-end performance.

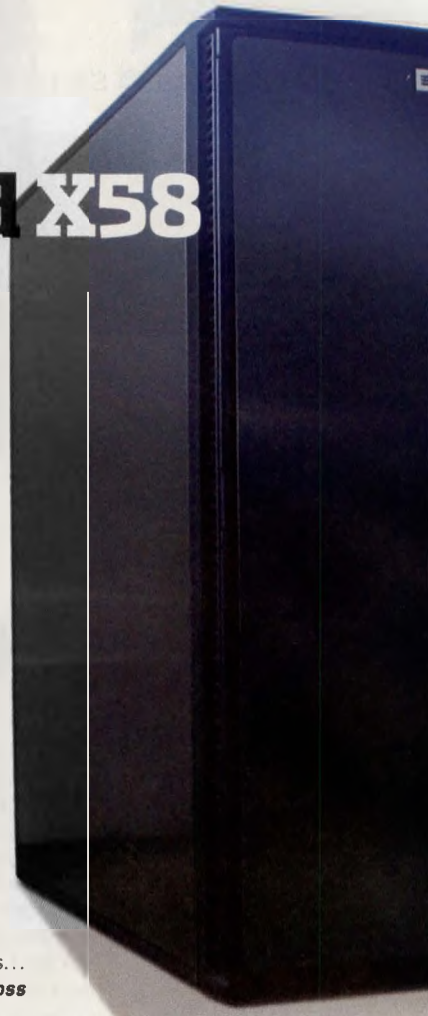
It was a similar story in our 3D tests. It scored a massive 21,383 in 3DMark Vantage. That's down to Palit's Nvidia GeForce GTX 295 graphics card. This is essentially two, top-end GTX 280s on one card, although everything is running at lower, GTX 260 speeds.

The motherboard is an ASUS P6T. It also offers two additional graphics card slots and two PCI slots. You can also add three more sticks of RAM, four hard disks and three more optical drives to complement the existing DVD writer.

In terms of connectivity there are two USB ports, FireWire and two audio jacks, two PS/2 ports, six USB, FireWire, eSATA, Gigabit Ethernet and six audio jacks. There's also coaxial and optical S/PDIF out and the graphics card sports an HDMI socket in addition to two DVI ports.

While TI's AMD-based PC (below) is a definitive example of great performance for a $2,000 PC, Enspire's Lightspeed provides almost a definitive version of a $4,000 PC. It will be too expensive for most, but if performance is what counts...

Nick Ross



9/10

TI Deluxe Phenom

Not Core i7, but it sure stands up to them.

Trinity International
www.ticomputers.com.au
$1,950

Great value; fast 2D performance; good for gaming.good battery life.

None.

SPECIAL FEATURES
2.6GHz Phenom II AM3 X4 810
2 x 1GB DDR3 RAM
2 x 500GB hard drives

TI's new PC is one of the cheapest, fully-featured PCs we've reviewed for a while. It's based around a quad-core 2.6GHz Phenom II AM3 X4 810 processor flanked by two 1GB sticks of high-quality Patriot DDR3 memory and two 500GB hard disks running in a RAID 0 array. With all this it scored 6,406 in PCMark Vantage which is a mighty impressive feat for a sub-$2,000 PC and shows that AMD is right back in the game.

TI uses a high-quality Gigabyte GA-MA790XT UD4P motherboard, which contains a 2oz layer of copper between its PCB. This is supposed to aid heat distribution and consequently, stability. Over the past few months it looks like the claims carry some weight. It's also a great board for overclocking.

Graphics are handled by Nvidia's new 896MB GeForce GTX 260. This is basically a stripped down GTX 280 that carries roughly 3/4 of the performance but it's still a mean performer, scoring 12,322 in 3DMark Vantage.

At the front are four USB ports, two audio jacks and a DVD writer. At the back are eight USB ports, two PS/2 ports, optical and coaxial S/PDIF out, Gigabit Ethernet, six audio jacks and two eSATA ports. Unusually there's both FireWire and mini FireWire, meaning it's very well catered for in terms of connectivity.

The peripherals include TI's usual, cheap-but-adequate, wired, Logitech keyboard and mouse. The 22in LCD is LG's W2252TQ which is stylish, crisp and clear. Finally, note that the 32-bit version of Vista Home Premium is installed.

There are slots for two more sticks of RAM, a second graphics card, plus two PCI and two PCI-E 1x slots. There's room for six more 5.25in disk drives (you'll need brackets to add 3.5in drives).

All in all, it's great value, offering both 2D power and 3D performance. You can buy faster, for sure, but this is a PC that is genuinely better value than any Core i7-based machine we've yet seen.

Nick Ross

8/10

Cooler Master Hyper TX2

Affordable cooling for the mainstream user.

Cooler Master
www.coolermaster.com
$49

Cheap; good features; reasonable performance.

No i7 support.

SPECIAL FEATURES
Copper base
Aluminium fins
Three heat-pipes

If you find yourself wanting to go down the aftermarket cooling route but don't want to spend over $100 for that perfect heatsink/fan combination, there are still plenty of choices. The thing you've got to be careful of, though, is that you're not buying something that performs worse than the stock cooler. And while that might sound difficult to anybody who's seen a standard 775 cooler from Intel, it does still happen.

While the Hyper TX2 doesn't support the new i7 platform from Intel, it does support the older 775 design along with AMD's 754, 939, 940 and AM2 sockets. Weighing in at only 482g, it's clearly lighter than some of the coolers we've looked at over the recent months. The $49 price tag gives us a fair idea that this unit is aimed more so toward the mainstream user who wants to do a bit of light overclocking.

Don't let the small price tag scare you off though; the Hyper TX2 offers a lot of the features we see in higher end units, including a copper base, aluminium fins and three heat-pipes. Standing at 136.5mm tall, it's not a compact cooler, although it's certainly not as meaty as some of the more expensive coolers. Cooler Master has used a 92mm fan, which spins at a fairly peaceful 1,800RPM and it manages to push just over 41 CFM of air.

Strapped into our Intel Q6600 test bed, we found that when compared to the stock Intel cooler at idle, it sits around two degrees Celsius cooler. But under load is where its abilities shine. The Hyper TX2 gave us a six-degree temperature drop. Furthermore, this is all done at a very reasonable 22.32dBA.

While you won't find an enthusiast using the Hyper TX2, if you want a cooler for under $50 that performs better than the stock cooler not only in cooling but also with regard to noise levels, then it's an excellent choice. It's also a very good choice for someone who wants to do a bit of light overclocking, and once you find yourself familiarised with the process you might go hunting for something bigger.

Shane Baxtor

9/10

Thermalright Ultra-120

Go large or go home: this is one big cooling solution.

Thermalright
www.thermalright.com
$150

Excellent cooling performance; easier installation.

Huge and heavy.

SPECIAL FEATURES
1,600RPM fan
52-piece aluminium fin
Six heat-pipes

Thermalright's Ultra-120 got the quiet nod from a number of overclockers in its original incarnation, and the follow-up Ultra-120 eXtreme was just as well received when it launched late 2007.

This is the third incarnation of the Ultra-120 eXtreme remarked with the 1366RT moniker. The 1366RT version is compatible with motherboards that support Intel Core i7 processors in the new 1366 pin socket. Unfortunately, as is the case with nearly every other Intel socket change, coolers designed for the old 775 pin won't necessarily work with the new socket 1366.

The Ultra-120 eXtreme 1366RT has a redesigned bracket and backplate to fit the new socket, while supporting the monstrous 156 x 133 x 38mm cooler. Weighing in at 790g as well, it's definitely got some heft behind it. The new version of the Ultra-120 eXtreme also includes a newly designed 120mm fan bracket in the box, paired with a 1,600RPM fan to keep the air moving through the fins. The cooler's mounting bracket has also been updated, opening with a scissor motion for easier installation.

With a 52-piece aluminium fin construction, six heat-pipes moving heat from the nickel plated base and the fan able to push 63.7CFM, there's not much this cooler can't handle. Our testing showed it kept the Intel Core i7 965 Extreme and i7 920 under 60 degrees under full load, so there's plenty of headroom there for some overclocking.

There is a down side to the Ultra-120 eXtreme 1366RT. Its sheer mass makes it a small liability if you move your PC around at all, especially considering the force it exerts on the motherboard when mounted horizontally. There's also the cooler's height to consider. Standing nearly 165mm off the motherboard when mounted, there's a concern that it won't fit in some mid-sized tower cases.

In essence, the Ultra-120 eXtreme 1366RT is a slightly updated version of a real winner. A great choice all-round, but beware its size.

Nick Race

8/10 Galaxy GTS 250

New, but not that new.

Galaxy
www.galaxytech.com
$299

Value for money; HDMI; great cooling. ✔

9800 GTX+ with a new name. ✖

SPECIAL FEATURES
738MHz core
1,836MHz shaderclock
2,200MHz DDR clock speed

Expanding on the 200 series, NVIDIA has released the GTS 250. The problem is that it's nothing more than a re-branded 9800 GTX+. And the thing to remember about the 9800 GTX+ is that it was simply an overclocked 9800 GTX which was released 12 months ago.

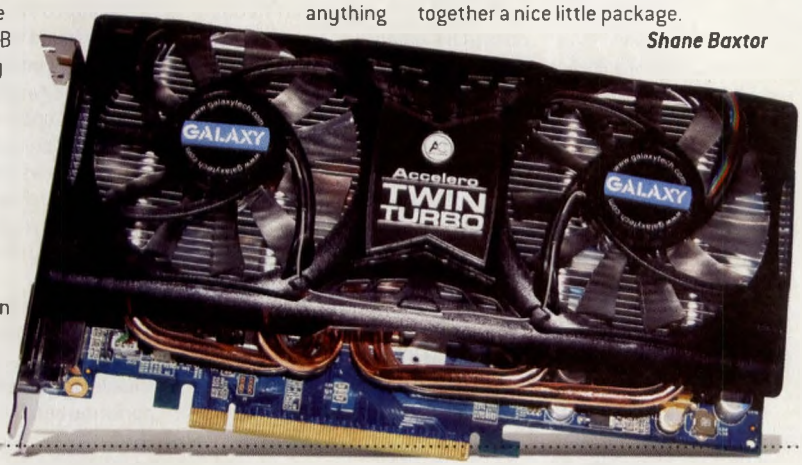
As far as speeds go, there are no surprises here. Galaxy hasn't taken the time to overclock this model, which sees the core come in at 738MHz, the shaderclock at 1,836MHz and the 1GB of GDDR3 memory at a rather healthy 2,200MHz DDR clock speed.

Inside the package Galaxy has included everything you need to get up and running. As well as the normal documentation and driver CD, there is also a copy of Galaxy's own overclocking software called XTREME Tuner. As far as cables go, a component-out dongle, molex to 6-pin PCI-E convertors, S-Video cable and an S/PDIF loop-back cable make up the bundle. Galaxy has opted to use an aftermarket cooling solution. The Arctic Cooling Accelero Twin Turbo cooler does a fantastic job of keeping the card cool while only producing around 63dB of noise. On the I/O side of things, Galaxy has decided to mix it up by including a native HDMI connector, which can carry both audio and sound using the included loop-back cable.

When it comes down to the raw performance numbers, we don't see anything new, with the card performing as a 9800 GTX+ would. What this means is we have a card that is capable of performing well in most games at up to 1,920 x 1,200 with in-game settings in the high to very high range.

While the card is nothing more than the 9800 GTX+, there's nothing wrong with it. Performance is strong, pricing is aggressive and Galaxy has put together a nice little package.

Shane Baxtor



9/10 Inno3D GTX 285 Overclock

A great performer made faster.

Inno3D
www.inno3d.com
$719

Performance; overclocked; good bundle. ✔

Very high price point for a second place card. ✖

SPECIAL FEATURES
700MHz core clock
2,483MHz DDR
Warmonger game

While the GTX 285 might not be the fastest graphics card available, it is a better option for a lot of people. If you're not interested in dealing with multiple GPUs and think SLI is a pain, then the GTX 285 is an excellent choice. The other reason why it's better than the GTX 295 is that if you have money to burn, three of these cards manage to outperform two GTX 295s, despite the twin GTX 295 setup being a GPU up on the Tri-SLI GTX 285 configuration.

If you find yourself wanting more performance than a stock GTX 285 offers, the overclocked version from Inno3D could well be the card for you. Looking past the catchy gold and black theme on the graphics card cooler and diving into the specs, we see a decent jump in clock speed that warrant the 'Overclocked' tag.

While the shaderclock has remained the same and the 1GB of GDDR3 memory has received only a slight bump from 2,483MHz DDR to 2,560MHz DDR, the core clock has gone from 650MHz to 700MHz. This gives the card a good jump in performance when compared to a card running at stock speeds.

Looking at the bundle, it's good to see that Inno3D has given us a full version game: Warmonger. We also have all of the standard extras, such as a manual, driver CD, molex to 6-pin PCI-E, S/PDIF loop-back cable, S-Video out, component out, DVI to VGA and DVI to HDMI connector.

In our overclocked i7 system running at 3.8GHz, the GTX 285 from Inno3D really shines, managing to offer a nice little bump in performance. At some points the overclock is able to push past the all-important 30fps minimum that we love to see in some of the heaviest GPU-taxing games.

The GTX 285 is cost-effective, can ultimately offer the best performance in Tri-SLI and really does perform excellently out of the box.

Shane Baxtor

7/10

Sound Blaster X-Fi Go

Better than most laptop soundcards and USB sound devices.

Creative Labs
www.au.creative.com
$99.95

Portable and very easy to install. ✔
Software bundle a 250MB download; included earbuds are cheap and nasty. ✖

SPECIAL FEATURES
EAX audio effects
X-Fi Crystaliser
CMMS-3D

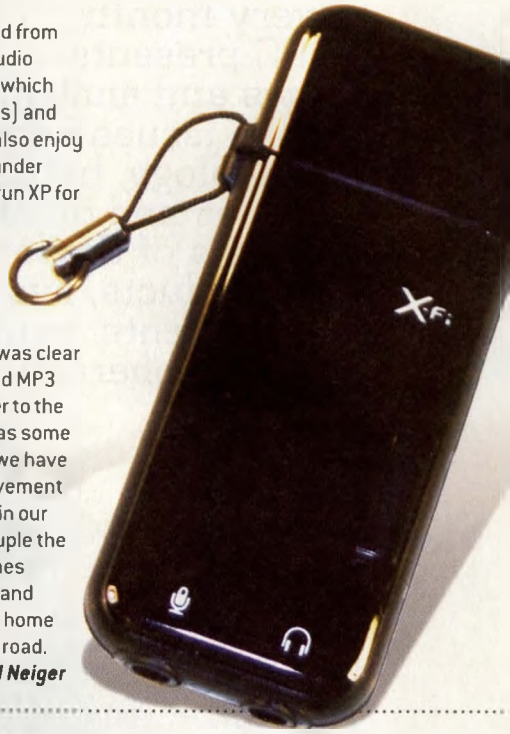
The Creative Sound Blaster X-Fi Go provides one of the easiest ways to upgrade the ordinary sound devices built into most laptops and PCs. This USB key-sized device is truly plug and play with all of the necessary software and drivers preinstalled on the 1GB memory drive built into the unit. Plug the X-Fi Go into a USB port and your computer will see a memory key, but once you run the included software, you will also be able to hear high-quality audio through the headphone socket on the unit.

Like most Sound Blaster products the X-Fi Go provides a wide range of DSP (digital signal processing) effects to enhance your audio experience. These include various EAX audio effects to simulate various auditoriums, X-Fi Crystaliser which enhances playback of MP3 and other compressed music formats and CMMS-3D which provides pseudo surround sound effects whilst listening through headphones.

An optional software bundle (of about 250MB) which you can download from the internet also gives you an audio editor, Creative MediaSource 5 (which lets you organise your audio files) and Karaoke software. Gamers will also enjoy the 3D effects which work well under Vista (so you no longer need to run XP for the full gaming experience).

In terms of sound quality we hooked the X-Fi Go up to our reference Anthony Gallos speakers and found the audio very good. The sound was clear and free of background noise and MP3 files sounded brighter and closer to the originals. It may not be as good as some of our professional audio cards we have in the lab but is a definite improvement over the onboard audio devices in our laptop and PC motherboard. Couple the X-Fi with a good set of headphones (rather than the included buds) and you will definitely enhance your home theatre experience when on the road.

David Neiger



8/10

Corsair TX750

Huge 60A single-rail design for maximum power.

Corsair
www.corsair.com
$225

Single-rail design; great specs; certified efficiency. ✔
Some of that dollar value is going to unnecessary packaging. ✖

SPECIAL FEATURES
80-Plus certified
5-year warranty

Tweaked by Corsair, the original design is manufactured by Channel Well Technology (CWT). The inner workings of this unit are specified for a massive 60A on a single +12V rail. This offers a heavy-duty 624W on just the +12V rail while the design also provides an additional 170W across the 24A +3.3V rail and 30A +5V rail.

Marked with the 80-Plus certified badge, the TX750 conforms to the 80+% efficiency of this certification. While the unit doesn't have direct certification and licensing of SLI or CrossFire support, neither of these multi-GPU platforms fazes this unit: both run effortlessly.

Originally the TX750 was the flagship of Corsair's power supply line-up, however it has since been surpassed by the TX850 and HX1000 products. However, by doing so, the TX750 is pushed into a more affordable and cut-throat mid-range part of the market. While it still carries a slight price premium compared with other competition such as the PC Power & Cooling Silencer 750W, its 5-year warranty and Corsair's reputation for taking care of customers post-purchase, the slight premium can be seen as worth it. The TX750 isn't only a solid performer on the spec sheet, and during testing its wrapped in velvet and packaged in foam. It's touches like this that you come to expect from premium products with premium prices.

One big issue, especially with the summer we've recently had here in Australia, is heat dissipation and performance under heat stress. Given the units rated wattage and 80+ certification, in a 50-degrees Celsius heat chamber and cooled by a 140mm Yate Loon fan, the TX750 is well suited to dealing with the Australian summer and assures full up-time for your PC.

Shane Baxtor

APC MAGAZINE apc HIGHLY RECOMMENDED

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M905APC

8/10

Lian Li V2010

Another instant classic from Lian Li.

Mittoni
www.mittoni.com.au
$599

Fantastic quality; feature-packed. ✔

Quite plain; expensive. ✖

SPECIAL FEATURES
Seven 5.25in bays
Four USB 2.0 ports
Four fans

Lian Li and value for money are two terms that can't really be mentioned together. While the quality of its cases are second to none, you can ultimately get something that you feel looks better and has similar features for a fifth of the price. The V2010 is a pretty standard design; its sleek black brushed aluminium look is great and its seven 5.25in bays at the front scream practicality. Towards the bottom we have our power and reset button with the logo sitting attached to a grill that holds a 140mm fan.

Apart from the connectivity ports at the top of the case which carry four USB 2.0 ports, FireWire, eSATA and audio in and out, there isn't a whole lot to look at. It isn't really until you start to actually use the V2010 that you feel the Lian Li difference.

The rounded edges help protect you from getting cut whilst the 1.2mm-2mm aluminium is light, yet sturdy. The sheer footprint of the 210 x 620 x 590mm full tower gives us so much room to play with and it supports motherboard standards from M-ATX to E-ATX.

Aside from the single 140mm fan located at the front of the case, three more 120mm fans are located throughout to help keep all your components cool and the zoned design of the case helps direct hot air out of the case efficiently.

The V2010, while not being an eyesore, is nothing special to look at. But as with most of Lian Li's chassis, where it shines is in the thermal performance, build quality and ease-of-use categories. This of course comes at an increased cost, but if you find yourself wanting a high-end case that is all practicality and no flair, then you really can't go past something like the V2010 from Lian Li.

Shane Baxtor

6/10

CM Storm Sniper

Let's see what Cooler Master's new brand is brewing.

Cooler Master
www.coolermaster.com.au
$298 or $349 with AMD Dragon Artwork

Excellent cooling; good control panel. ✔

Big steel construction; cable routing might be tricky with some PSUs; love it or leave it design. ✖

SPECIAL FEATURES
Solid gauge steel
USB routing security
Fan controller

Storm's a new branding exercise from venerable chassis manufacturers, Cooler Master. With a focus primarily on gaming chassis and products, the CM Storm name might be one to look out for from now on. Built with a focus of 'strength, security and control', CM Storm's products are made with gamers in mind.

The CM Storm Sniper is a mid-sized gamer case, built from a solid gauge steel, so it certainly has 'strength' going for it. Too bad it doesn't have 'light weight' or 'portability' happening, though there are some convenient hand holds on the top of the case if you need to lug it.

The 'security' only really applies to LAN gamers, but it's a nifty idea. USB cables get routed underneath a screw-in slot cover, so they can't be unplugged and walk away. They've definitely got 'control' covered though, with a fan controller built in to the top of the case. The dial adjusts the speed of the built in fans, letting you notch them down when you want some peace and quiet, or turn it up on a warm day.

That brings us to the Sniper's strength; air flow. The case has a good covering of mesh, which allows excellent air flow for hot components. Combined with two big 200m built in fans, in the front and top, plus a 125mm in the rear, there's plenty of wind.

You can fit a decent amount in the Sniper, with room for five 5.25in drives and five 3.5in drives and support for a full-sized ATX motherboard. The 5.25in drive bays use Cooler Master's snap close design, and the 3.5in bays use the pseudo hot plug style, which does away with screws, but still leaves cabling a manual effort.

Overall the Sniper is a well-built, decently designed gaming-style case with no obvious incongruities. Does it excite? Not really, but it will do the job.

Nick Race

9/10

Silicon Dust HD Home Run

Easy-to-use tuner card with perfect picture quality.

Lako Pacific
www.hdhomerun.com.au
$299

Cheaper and easier than installing multiple antenna points. ✔

No inbuilt wireless networking. ✖

SPECIAL FEATURES
Two built-in HD tuners
Dual antenna sockets

Occasionally we get something that is so good that we wonder why no-one ever thought of it before. The Silicon Dust HD Home Run is such a device. Rather than messing around with multiple tuner cards and antenna points, the HD Home Run is effectively an HD tuner server with two built-in HD tuners that allows any PC on the network access to digital TV services as if a tuner card was installed directly to the PC. Simple and brilliant.

The device itself is a fairly ordinary black plastic box with two separate antenna sockets (one for each tuner) so you will need an antenna splitter if you intend to use both tuners. Since there are no controls on the device, it can be installed anywhere you have an antenna outlet and network cable. Once installed you simply load the driver onto any computer on your network to access the device as if the tuner was directly connected to your machine. Provided you have the antenna splitter, two programs can be streamed to any computer on your network simultaneously.

Multiple HD Home Run devices can be installed on the same network, so for not too much money you could built a tuner rack that can stream all channels to all computers. The BDA driver works with most PVR software including Media Centre, GB PVR, BeyondTV and SageTV.

The picture quality is perfect, and we can see this device as a must-have for anyone building a connected home or entertainment centre. The only improvement that could be made is to have wireless networking built in.

David Neiger

7/10

Kingston HyperX 3GB Kit

Great performance, small capacity.

Kingston
www.kingston.com
$319

Offers very fast performance. ✔

Expensive; only available in 3GB. ✖

SPECIAL FEATURES
2,000MHz DDR
New heatsink included

Kingston has recently expanded its line of Triple Channel HyperX kits to include a 3GB PC3-16000 set. What this translates into is a kit of DDR3 memory that is capable of speeds of up to 2,000MHz DDR. As with most kits of RAM, though, the massive speeds do come at a cost. In this case it's the fact that you can only buy this in a 3GB capacity, and for some people this simply isn't enough.

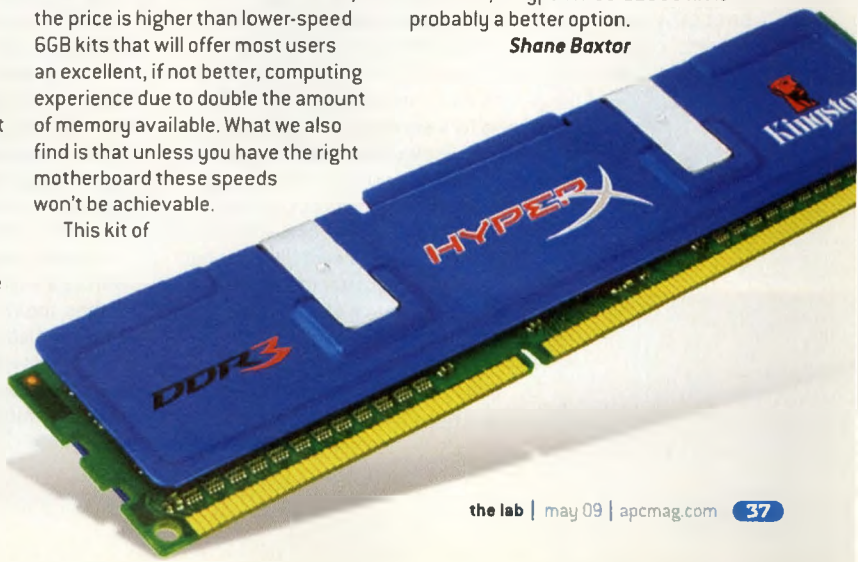
The latest triple-channel memory kits from Kingston all come under the new T1 series of units. This means that a newer heatsink is included, which is designed to help improve the cooling ability of the modules. The one thing that you have to look out for, however, is if you have a cooler that overhangs onto your memory slots, in which case these modules may not fit.

As we've seen with most kits that venture up into the 1,800MHz and beyond realm, the Kingston HyperX PC3-16000 3GB kit has quite relaxed 9-9-9 latency timings. This is of course a common trade-off with fast memory, but the good news is that the massive amount of speed on offer passes the bandwidth offered by lower latency 1,600MHz kits.

While the kit no doubt offers some massive performance, there are some serious cons. For starters, the price is higher than lower-speed 6GB kits that will offer most users an excellent, if not better, computing experience due to double the amount of memory available. What we also find is that unless you have the right motherboard these speeds won't be achievable.

This kit of memory is really designed for the highest end of the enthusiast market. While the modules do an absolutely fantastic job of being fast, the high price tag and skill needed to overclock is going to limit the market to a very small group of enthusiasts. If you want something fast and don't want to break the bank, a HyperX PC3-12800 kit is probably a better option.

Shane Baxtor



7/10

Apple 24in LED display

More a docking station than a monitor.

Apple
www.apple.com/au
$1,499

Looks great; excellent images.

Limited connectivity.

SPECIAL FEATURES
1,920 x 1,200 resolution
DisplayPort

Depending on your point of view, Apple's either leading the industry with their new 24in Cinema Display or exhibiting arrogance. While there are literally hundreds of screens for computer users to choose from, only Apple has adopted the new DisplayPort connector. For Mac users, the 24in Cinema Display is more than just a screen: it's really a docking station for its range of notebooks. Connected to our MacBook Air it acted as a display, USB hub, speaker system, web cam and video-conferencing centre.

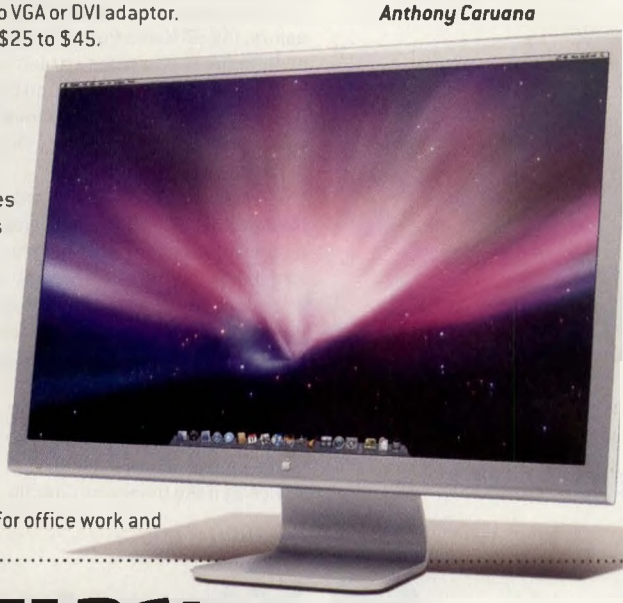
There are two cables trailing from the back of the 24in Cinema Display: one for power and another with three connectors. That three-headed cable delivers power with Apple's MagSafe connector, USB and video connectivity to a portable Mac. Again, it's more docking station than a simple display.

The 24in Cinema Display looks great and has a generous amount of tilt adjustment. However, there's no vertical adjustment and the screen can't be rotated between portrait and landscape orientations: significant omissions at this price point. If you're planning to use the 24in Cinema Display with an older Mac or, dare we suggest it, a PC, you'll need to spring for a DisplayPort to VGA or DVI adaptor. These range from $25 to $45.

Image quality was excellent. Day-to-day tasks like working with spreadsheets, documents, images and presentations were a pleasure. The 1,920 x 1,200 resolution was more than enough for these tasks and for watching DVDs. Surprisingly, the response time is rated at a paltry 14ms. That's fine for office work and DVDs but clearly this isn't a screen pitched at the hardcore gaming crowd.

The Apple 24in LED Cinema Display is designed lock, stock and barrel for the Mac crowd. Image quality is tops, but a few features are missing.

Anthony Caruana



6/10

ASUS VK266H 26in

Heaps of connectivity; shame about the screen.

ASUS
www.asus.com.au
$599

All the inputs you could want or need.

Some unspectacular benchmark results.

SPECIAL FEATURES
1,920 x 1,200 resolution
2ms response time

We live in a high-definition world where a display needs to connect with multiple devices. There's the computer, Blu-ray player, VCR, gaming console and all manner of other gizmos. That's where ASUS's VK266H comes to the fore. As well as the expected DVI and VGA connectors, it includes HDMI and component connectivity as well as a 2MP webcam, speakers and USB hub.

At 26in with 1,920 x 1,200 resolution, the VK266H would suffice as the cornerstone of a multimedia set up for a small room, as well as part of an office workstation. Getting it ready for use was a simple affair. Once we'd extracted it from its box, we put its base on and the VK266H was ready for use. There was decent tilt range but no vertical adjustment, so taller users may need to sit it on a phone book to get it at the right height.

Image quality was very good in day-to-day tasks. We put the VK266H to the test with PassMark's MonitorTest and found that the rendering of ellipses and obliques was very good. While there was some jaggedness, it was only noticeable on very close inspection. However, we did note some blurring between adjacent blocks of some colours, particularly at the interface between the red and magenta and the blue and green blocks. It wasn't the worst we've seen but it was noticeable. Text was displayed clearly although we did find that small typefaces, around the 6-point mark, were a little blurry.

As you'd expect with a panel rated at 2ms, the VK266H did a good job with fast motion video. We watched a number of movies with fast-moving action sequences and couldn't detect any ghosting.

There's a lot to like with the ASUS VK266H. While some benchmark results were short of spectacular, it delivers decent image quality and offers plenty of pixels for your money.

Anthony Caruana

8/10

Sony Cybershot T90

Similar looks; better performance.

Sony Australia
www.sony.com.au
$599

Styling; lens; images; HD output. ✔
Control placement; touch screen. ✖

SPECIAL FEATURES
12MP
3.5in LCD
1080p stills

Call me an old cynic, but I am starting to think that a lot of the new digi-cameras being launched are being released for the sake of it rather than being a truly groundbreaking new product.

For example, on my desk I have a Sony Cybershot T700. It's a great little camera, stylish, 10.1 megapixels and a monster sized LCD. I use it a lot and it stays in my glovebox for that time I see something that warrants a quick shot or two.

But I now also have a T90 and it is also stylish, has a slightly larger 3.5in LCD and a natty slide-down lens cover. Rather than 10MP, however, it is 12MP. From a distance, you would hardly pick the two apart from looks alone. Close up, yes they are cosmetically a tad different (the zoom control is slightly altered) but in virtually every other area, they are the same. There's the 4x optical zoom, face detection, red-eye correction etc.

The majority of controls are touch-screen based, and I have railed on about my dislike for this many times, but the T90 is not short in the nifty functions area: more than enough to keep the more image control happy person smiling. But if you just want a point 'n' shoot, it fits in there equally well too, although you are paying a premium price for that.

But wait! What's this? HD? Absolutely, the T90 can shoot stills in full 1080p high definition, and even shoot movies in hi-def, albeit only 720p, not full-blast 1080p. Either way, you'll probably need to get a decent-size Memory Stick DuoPro to take advantage of this facility, as the inbuilt 4GB will be used up pretty quickly. And considering the T90 costs only $40 more at than the T700, deciding which model to get is a no brainer.

David Hague

8/10

Panasonic HDC TM200

Superior image quality, with a couple of caveats.

Panasonic Australia
www.panasonic.com.au
$2,089

10MP; optical stabilisation; auto close lens; low light capability. ✔
Build quality; touch-screen; no headphone jack. ✖

SPECIAL FEATURES
Three sensors
16GB internal memory
SD card slot

Panasonic has the edge in the upper range of camcorders, simply as they have pretty much standardised on using three image sensors. Having three sensors means, simply, a superior image. And when we are talking high definition, as we are with the HDC TM200, this means a very great deal indeed.

The TM200 is small enough to slip into a jacket pocket, there is a decent LCD screen with full rotation, 16GB internal memory and an SD card option, and an auto shut lens cover. It feels nice and balanced in the hand with the on/off, still shot and start/stop switches operational by the thumb.

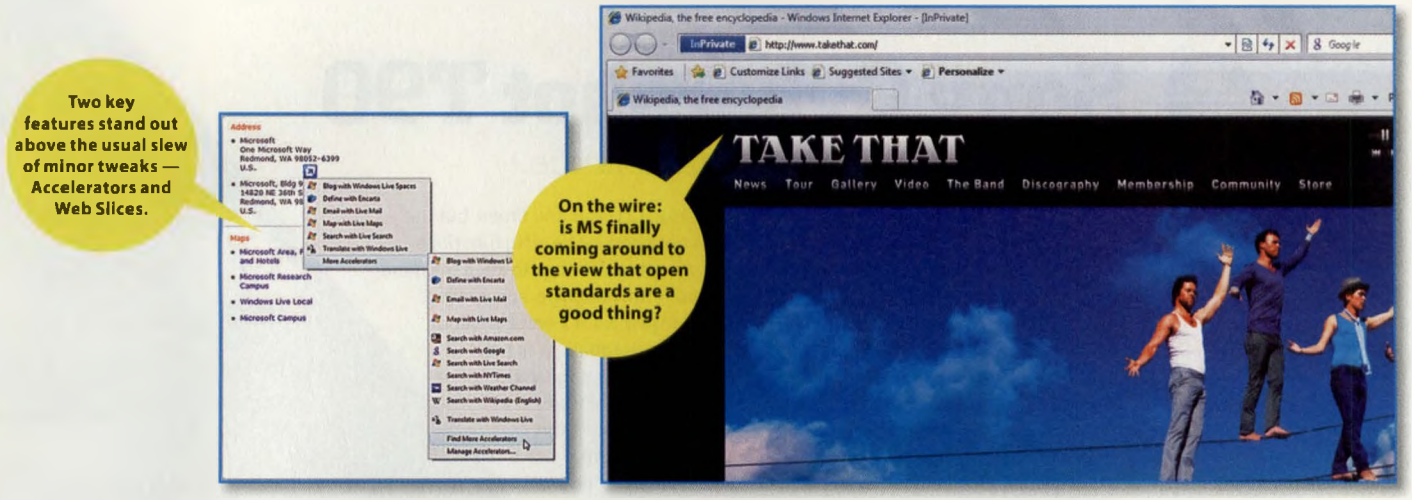
And unlike cheaper camcorders, image stabilisation is optically-based instead of electronic and thus far superior.

When in still mode, images can be saved at 10.1 megapixels, which is as high as most current upper-level still cameras and ideal for when mixing still images into hi-def footage. The TM200 is pretty flash in relatively low light too.

The camcorder body feels a bit plasticky, especially when the LCD is open, and the DC in port is underneath the battery. I also have an issue with the on-board microphone(s), and unfortunately there is no way to add an external mic.

With those caveats, the TM200 is a good little unit. Whether you can justify the price is your call, but if you are a dedicated amateur, can live with the AVCHD hi-def format and lack of headphone jack, then the TM200 is worth a test drive.

David Hague


Two key features stand out above the usual slew of minor tweaks — Accelerators and Web Slices.
On the wire: is MS finally coming around to the view that open standards are a good thing?
TAKE THAT
News Tour Gallery Video The Band Discography Membership Community Store

EXPLORER'S EVOLUTION

Internet Explorer 8 is finished — so how does it stack up against the competition?

The latest version of Internet Explorer is now out the door. Internet Explorer 8 launched in late March and is a polished offering that's a mix of something old, something new and something borrowed. Colour-coded tabs, a better add-on manager and a stealth browser mode, InPrivate, are all welcome updates. For developers, though, the big news is enhanced web standards support.

There's a curious tale behind this. Early beta versions of IE8 weren't so compliant. Even this first release candidate relies on a Microsoft-authored standard to implement Web Slices — one of the browser's big selling points. It seems like the IE development team has always struggled to innovate while sticking to standards. On the one hand, new features introduce proprietary ways of working with the web. On the other, pressure from web developers, bodies like the World Wide Web Consortium and even the European Commission has visibly changed the company's standards policy.

This time, the IE developers just might have got it right, creating a browser that will please at least some people all of the time. For most casual users, the experience of browsing with IE8 will be positive. Two key features stand out above the usual slew of minor tweaks — Accelerators and Web Slices. Accelerators are add-ons that extend browser functionality by enhancing connectivity with other services in a way that's both intuitive and time-saving. You highlight content in a page and an icon pops up. Click the icon and a contextual menu offers a range of options. For example, highlighting an address enables you to open the location on Windows Live Maps. Like Mozilla extensions, you can add further Accelerators to IE8 using the overhauled Add-ons panel. This gives you access to helper applications as well as bona fide extensions — giving you much-improved control of the browser.

Using the Favourites bar to access more add-ons gives you your first taste of Web Slices — a controversial feature that enables you to track snippets of content in a site without having to go back to the original page. When you find a Web Slice-enabled page, an icon will pop up as you hover your cursor over content. When selected, the Web Slice is added to your Favourites bar. Click the item and you'll see a section of the page appear in a pop-up window. Web Slices alert you when changes have been made to content, so they're ideal for tracking eBay auctions, message boards, stocks and so on.

A developer can mark a section of a page as a Web Slice using hAtom — a pre-existing microformat for blog syndication — and hSlice. Here's the controversial bit. hSlice is all Microsoft's own work, a move that harks back to the time when adding new features to HTML by rewriting it was commonplace. However, this time around Microsoft has placed the specification into the public domain using a Creative Commons licensing format, which enables other browser manufacturers to easily implement support for it. This glasnost approach is very different to Microsoft's proprietary treatment of code in earlier iterations of Internet Explorer — including the creation of its own version of JavaScript (Jscript) and add-ons to HTML like iframes. It's in keeping with a statement that the company made at the end of 2006, though: the Microsoft Open Specification Promise is a strategy with similar features to open-source licences, even though Microsoft has developed its own schemes.

So is Microsoft finally coming around to the view that open standards are a good thing? It seems so: in IE8, Microsoft balances the kind of flashy new features that make Joe Public switch browsers alongside under-the-hood alterations that are much more meaningful. The seas are choppy for IE as it now faces the first genuine challenges to its monopoly since Netscape Navigator hit the rocks, but the IE dev team seem to be making the right choices. But will it be enough to win over diehard Firefox fans or devotees of the lightweight newcomer, Chrome? Not on your life.

Karl Hodge

8/10

Firefox 3.0.6

Firefox
www.getfirefox.com
Free

Community-developed plug-ins. ✔

Overtaken by Chrome? ✖

Mozilla Firefox, the phoenix that rose from the flames of Netscape Navigator's demise, remains the web's second most popular browser. Variously described as having between 22 per cent and 26 per cent of the market, its userbase is as loyal and evangelistic as Apple fans. Until Google Chrome was released in beta a few months back, Firefox had the fastest JavaScript parser on the desktop, making it the best tool for using next-generation web apps.

Google benchmarks suggest that Chrome now beats Firefox on a number of key tests. Meanwhile, Firefox developers insist that version 3.1 will be equal to Google's challenge. While Microsoft has improved add-on management in IE7 and IE8, Firefox is supported by a whole community of plug-in developers who have created thousands of customisations. And comparatively, Firefox is still as lean and mean as the day we downloaded it.

7/10

Safari 3.2

Apple
www.apple.com/safari
Free

Classy and user-friendly user interface. ✔

Perhaps not everything Apple claims it is. ✖

Safari, the browser originally bundled with Mac OS X, is also available for Windows. Apple applications are famous for their intuitive interfaces. Safari doesn't buck the trend, with clean lines and a minimal chrome look. The Windows version doesn't mess with the Mac layout one iota, keeping the brushed steel interface of its Apple cousin. It does improve on bookmark organisation though, with a look and feel imported from iTunes to make beginners comfortable with creating folders for favourite links. It has most of the features you'd expect from a modern browser too, including tabs and RSS handling. It's lightweight and very standards compliant, being built on open-source rendering engine WebKit. Apple's own benchmarks assert Safari 3 is twice as fast as its closest rival. Our use confirms Safari renders script-heavy pages easily, but Apple's numbers don't seem to match ours.

7/10

Opera 9.63

Opera
www.opera.com
Free

The original 'alternative' browser trailblazer. ✔

Benchmarks show Opera's been superseded. ✖

In many ways the fading star of alternative browsers, Opera's innovations have all been adopted by the mainstream. Tabbed browsing, stealth browsing and built-in pop-up blocking appeared in Opera before they were adopted by Internet Explorer or Firefox. Still marketed as a smaller, faster alternative to the top two browsers, benchmark tests tell a different story. Firefox has been the faster tool for rendering JavaScript-heavy pages since version 3. Google Chrome now beats them both. Nudged into fifth place as a desktop browser by Safari and Chrome, Opera still remains a favourite on mobile devices. The company claims that Opera Mobile is the browser of choice for 120 million mobile users, with versions also installed on Nintendo's Wii console. That makes it the most popular embedded browser. Opera Mini, for smartphones, has 20 million users. Maybe Opera's future is mobile?

9/10

Google Chrome

Google
www.google.com/chrome
Free

The current cutting edge of browser functionality. ✔

A little overly streamlined at first glance. ✖

A late but well-received entry, Google Chrome is perhaps a more fitting nemesis for Internet Explorer than Firefox. It's feature-light, standards compliant and AJAX-optimised, even if its streamlined looks make it seem barely functional. There's no Home button on the main toolbar, for example, just Backward, Forward and Refresh icons. Don't be fooled. While IE8 — and previous versions of Internet Explorer — pile feature upon feature, Chrome was created for web services. Why clutter up your browser with fast-fading features when you can pick your own up-to-date favourites from the web? Chrome prioritises stability and speed, with its fast, multithreaded V8 JavaScript engine designed to run modern web applications. While cutting down on most clutter, Chrome retains a Favourites bar. Once the also-ran of browser features, it's the key to extending Chrome's functionality. Ours is populated with JavaScript snippets.

NEW HDTVs SUPERGUIDE

HDTV technology has again lept forward. **Jenneth Orantia** reports.

Last year, the big buzzwords for high-definition televisions were 100Hz processing and 24p playback. 2009 is set to be a more exciting year, with a host of technologies that differentiate this year's HDTVs from last year's. Internet connectivity is the most prominent (and arguably most exciting) development, but other technologies that'll make a big impact include DLNA networking, WirelessHD, LED backlighting, 200Hz and 600Hz processing technology and Energy Star certification.

Going online: prepare for a 'walled garden' of optimised web and media content in next-gen HTDVs.

ACCESS TO DIGITAL CONTENT

The Consumer Electronics Show in January saw TV vendors jump on web content in a big way. Sony, LG and Samsung introduced network-connected HDTVs with built-in access to widgets and other TV-optimised web content, while Panasonic rolled out an enhanced version of its VIERA Cast service (originally launched last year in the United States) to three more ranges in its HDTV lineup — up from only one series in 2008.

Rather than use the PC paradigm of a keyboard, mouse, and full access to the internet through a web browser, all of the HDTV vendors have opted for a 'walled garden' of content optimised for the TV screen that you can navigate using a remote control.

But don't throw out your living room PC just yet. None of the vendors have confirmed local plans to launch web-enabled HDTVs. Samsung announced it would be rolling out its Internet@TV - Content Service to 13 countries this year, but Australia wasn't one of them. Down under, the closest thing currently available is Samsung's proprietary InfoLink service on its Series 7, 8 and 9 LCDs. This is an RSS feed that displays news, weather and stock information in a panel at the bottom of the TV screen — not nearly as exciting as the TV widgets available abroad, but it's a taste of what's to come.

DLNA (Digital Living Network Alliance) certification, on the other hand, is readily available on a handful of HDTVs. DLNA certification lets two certified products share content over a wired or wireless network connection; devices that support the protocol include PCs, games consoles, NAS boxes and mobile phones. The types of files that can be played back differ between HDTVs; the Sony BRAVIA KDL40Z4500 can stream photos and music, while Samsung's Series 7, 8 and 9 HDTVs and the Pioneer PDPLX509A support photo, music and video playback.

Another easy way to get digital content onto the TV is via the USB port. Traditionally, this has been limited to displaying photos from a connected digital camera or flash drive, but a few of the new HDTVs support music and movie playback as well. Announced locally thus far are LG's 2009 plasmas (save for the entry-level PQ20D), which can all play MP3s and DivX files directly from attached storage devices. But a few others that may be making their way to our shores later on in the year include Samsung's Series 6 and 8 plasmas, which can play 3GPP, MKV, WMV9 and DivX files, and the Toshiba REGZA ZV650, which supports JPEG, MP3, MPEG 1, MPEG2 and DivX.

iPod owners may prefer Panasonic's new entry-level VIERA X1 720p LCD range that was announced at CES — the only series in the company's lineup to offer its new iPod Entertainment Kit. This consists of an external iPod dock that lets you navigate through and play music, movies and photos stored on your iPod using the TV's remote control, with an on-screen menu that mimics the iPod's user interface.

THIN IS IN

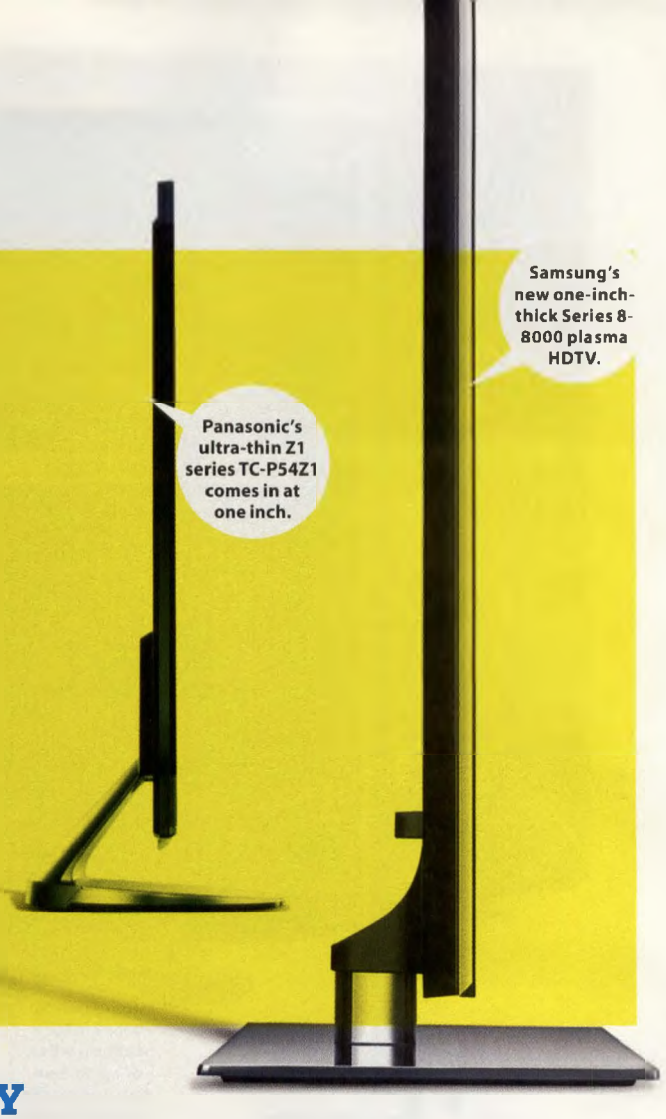
A parade of super-skinny HDTVs is heading our way. LG's LHX LCD range is less than an inch deep at its thinnest point; Panasonic and Samsung both have one-inch-thin plasmas (the Z1 series and Series 8 respectively); Samsung has also introduced three LCD lines that are just over an inch thick (the 6000, 7000 and 8000 series); and Sony stole the CES show with its BRAVIA ZX1 — a full HD LCD that's just a hair under a centimetre thick.

All of the LCDs use edge LED backlighting to achieve their ultra-thin profiles. Backlight units are usually the thickest components in an LCD, so relocating the LED light sources to one side and everything else to the other three sides shaves the depth of the TV down dramatically.

Another technology that's being used to shave those extra few millimetres off is WirelessHD. Save for the Samsung LCDs, all of the aforementioned ultra-thin HDTVs come with built-in WirelessHD for communicating with an external media box that houses most — if not all — of the set's A/V connections.

WirelessHD is a specification that transmits uncompressed full HD audio and video signals over the 60GHz radio frequency. Essentially, it allows for wireless HDMI connections, letting you mount a TV on the wall and have the Blu-ray player, games console, set-top box and A/V receiver connected to the external media transmitter in a separate location.

Sony is the only vendor that has announced WirelessHD locally, under the 'BRAVIA 1080 Wireless' branding. In addition to the ZX1, BRAVIA 1080 Wireless is available on the EX1 — a full HD LCD that isn't as thin but offers most of the same features at a slightly cheaper price point.



MORE HZ AND HD FOR YOUR MONEY

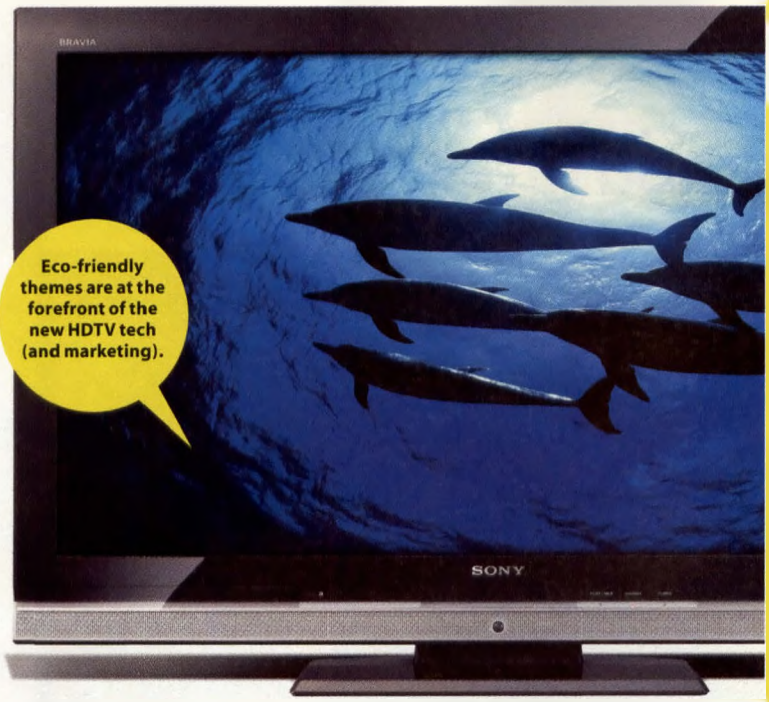
Just when you'd wrapped your head (and wallet) around 100Hz processing technology in LCD HDTVs, 200Hz LCDs come a knocking. Sony's BRAVIA Z series of full HD LCDs are the first in Australia to incorporate 200Hz Motionflow, which increases the video framerate from 50 to 200 per second. Essentially, this makes fast-moving action scenes look smoother and more natural by creating three additional frames for every original frame, eliminating the motion blur and judder that you get on standard 50Hz flat-screens.

At CES 2009, a few other HDTVs were announced with 240Hz (the US equivalent of 200Hz): Samsung's 8000 Series LCDs, Sony's XBR9 and Toshiba's new REGZA range.

But the more interesting development has been the introduction of plasma HDTVs with 600Hz Sub Field Driving. At first glance, it would suggest TVs with an impossibly high 600 frames per second, but the technology doesn't actually add any new frames to the original 50. Instead, it increases the plasma subfields that are displayed in each frame from 8 to 12 (50 x 12 = 600), allowing for faster response times to changes on the screen. LG's 2009 range of plasmas all offer 600Hz Sub Field Driving, and Panasonic announced that its Z1 and V10 series plasmas would also offer the technology.

With 200Hz HDTVs on the way, 100Hz technology has been pushed down to lower price points. Last year, it was only available on the flagship TVs from each vendor; this year, it's available in TVs under two grand, such as the $1,299 Kogan 1080P-42 and the 32-inch Samsung A650A1.

In the same vein, televisions that support full HD have become much more affordable. The aforementioned Kogan 1080P-42 is remarkably good value, offering full HD at the 42-inch screen size, but if you're after a name brand, Toshiba's 42-inch full HD REGZA RV550A is modestly priced for a 2009 model at $2,199. Of course, you can get even better deals on 2008 and 2007 clearance HDTVs.



Eco-friendly themes are at the forefront of the new HDTV tech (and marketing).

ECO-FRIENDLY SETS

Continuing on from the lead- and mercury-free themes of last year, lots of 2009 HDTVs released this year have Energy Star 3.0 certification — a standard for energy efficiency in the United States. This measures power consumption while the TV's turned on (maximum of 208 watts) and in standby mode (less than one watt), and it also forces vendors to include a menu that asks the user to choose between Home and Retail settings when the TV is first switched on. Retail settings (or 'Vivid mode') are typically the default that TVs are shipped in, and in many cases, those settings won't be changed for the lifetime of the TV. By switching to Home settings, the TV can consume up to 30 per cent less power.

Sony, LG and Panasonic's 2009 HDTVs all have Energy Star certification, and a few models in particular go that extra mile to be ecologically friendly. Sony's BRAVIA VE5 line (announced at CES, no local launch plans as yet) consumes 40% less power than other BRAVIA LCDs, and includes a standby switch that reduces the power consumption in standby mode to almost zero watts. It's got a built-in 'Presence Sensor' that turns the TV off when no motion is detected in the room.

LED backlighting has become more prevalent in 2009, replacing the CCFL lamp traditionally used in LCDs for a brighter and more energy-efficient backlight. Light sensors that detect the ambient light in a room and automatically adjust the LCD's backlight accordingly are also becoming more popular — a feature that saves energy and also improves the dynamic contrast ratio for deeper blacks.

HARD TIMES AHEAD

Despite all the exciting new developments in high-definition televisions, the picture isn't completely rosy. Declining profit margins on a global scale has seen another two TV vendors pull out of the market: Philips announced it would exit the consumer television in Australia by the end of 2008, and Pioneer announced it would exit the plasma market globally, with its current HDTVs to sell until the end of this year.

Pioneer's retreat from the plasma market started mid-way through last year when it announced that it would stop producing its own plasma panels and source them from Panasonic. Further cost-cutting measures came in September when Pioneer announced that its free delivery and installation service — long a differentiating factor between the company's plasmas and its competitor's — would cease. Finally, on February 12 this year, Pioneer officially announced that it would close down its TV business altogether and cease production by March 2010.

TV WIDGETS ANNOUNCED

The content partners vary between the different vendors, but most of the internet-enabled TVs offer access to the Yahoo! Widget Engine. This platform provides content from a range of sources — including Flickr, eBay, MySpace, Showtime, Blockbuster OnDemand, Yahoo! Weather and Yahoo! News — that you can view in a widget dock at the bottom of the screen at the same time as you're watching a movie or television program.

Samsung's Internet@TV - Content Service adapts the Yahoo! Widget Engine for select models in the company's 2009 range. LG's NetCast Entertainment Access system is similar to Samsung's, with Yahoo! widgets, YouTube and streaming movie rentals via NetFlix available on its 42- and 47-inch LH50 LCD models and 50- and 60-inch PS80 plasmas.

Internet content available on seven of Sony's new HDTVs consists of BRAVIA Internet Widgets (an adaptation of the Yahoo! Widget Engine) and BRAVIA Internet Video Content — a selection of free and paid services such as Amazon Video on Demand, YouTube, Yahoo! and Slacker.

Panasonic's VIERA Cast service uses much of the same content offered in the other HDTVs — including Amazon Video on Demand, YouTube and Picasa Web Album — but it uses a home screen of widgets rather than the scrollbar interface used by the Yahoo! Widget Engine.

Toshiba didn't demonstrate any internet-connected HDTVs at CES, but it announced plans to introduce a new range later in the year with TV widgets enabled by — you guessed it — the Yahoo! Widget Engine.

TOP SUB $1,500 HDTVs

Kogan 1080P-42

@ www.kogan.com.au

If you want the largest full HD TV for the least amount of money, the 42-inch Kogan 1080P-42 LCD is certainly one to consider. None of the bigger brands offer full HD at this price range — even at the smaller 32- and 37-inch model sizes — so it's a good option for bargain hunters.

The 1080P is a bit lean on the technologies found in other sets to improve contrast and colour, but it does offer a 100Hz Image Processing Engine to make sports and action movies appear smoother. There's also a built-in high-definition DVB-tuner and twin HDMI inputs for connecting a Blu-ray player and games console.

Of course, the savings you get on the TV have to come from somewhere, and in this case it's from Kogan's lack of in-store presence. You can only order the TV from the Kogan web site, although there's a seven-day money back warranty in case you change your mind.

Also, you'll have to factor in postage on top of the cost of the TV — to our office in the Sydney CBD, this cost an extra $98.18. According to the web site all items are usually dispatched within 24 hours. It comes with a 12-month on-site warranty, and there's telephone, live chat and email support.

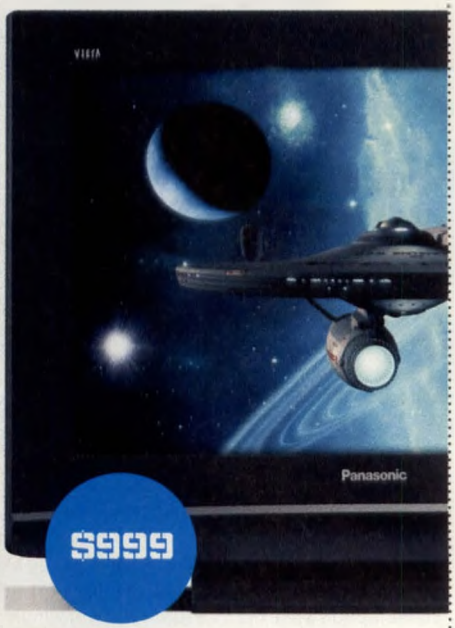
Sony BRAVIA KDLS37S4000

@ www.sony.com.au

We're cheating a little by sticking the 37-inch S Series LCD in the under $1,500 category, but the street price for this set comes in comfortably under the price range.

Unlike the colourful 20-inch models in the range, the KDLS37S4000 is only available in a standard piano black. It's not full HD (with a natvie 1,366 x 768 panel), but it offers a host of picture enhancement technologies to make up for it, such as the 3D Digital Comb Filter, 24p True Cinema (which displays movies at the same frame rate as film), MPEG noise reduction and an Advanced Contrast Enhancer — all run by Sony's excellent BRAVIA Engine 2 processor.

Changing settings on the KDLS37S4000 is a breeze thanks to the intuitive Xross Media Bar interface — the same graphical menu system used on the Sony PlayStation 3. A decent selection of inputs are on-board for connecting Blu-ray players, DVD players, games consoles and other peripherals, including three HDMI, two component, three composite and one PC — all of which can be easily accessed thank to the TV's swivel stand. For other Sony products connected via HDMI, it also offers BRAVIA Sync technology, which lets you use the TV's remote for controlling the other compatible devices.



VIERA TX-26LXD8A

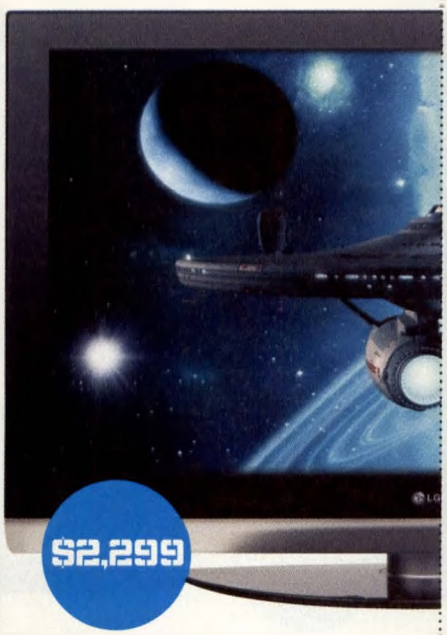
@ www.panasonic.com.au

You wouldn't have to look hard to find 26-inch high-def LCDs for cheaper, but there won't be too many that offer the same excellent picture quality of the VIERA TX-26LXD8A. Weighing a small 12.5kg and measuring only 50cm high, it's ideal for use in the bedroom, kitchen or study.

Despite its compact size, many of the technologies found in the larger and higher-end VIERAs have filtered their way down to this model, including 3D colour management, 24p Real Cinema Playback and an intelligent scene controller that adjusts the brightness and contrast based on the scene that's currently playing.

Avid TV watchers will like the built-in HD tuner and 7-day electronic program guide, while gamers and movie buffs will appreciate the decent selection of inputs: two HDMI, two component, four composite and one PC. The latter input means you could also use the TX-26LXD8A as a monitor for your PC, although the 1,366 x 768-pixel resolution wouldn't be as good as the ones found on dedicated LCD monitors in the same size (which typically run from 1,680 x 1,050 and upwards). It's also VIERA Link-compatible, so you can control any compatible Panasonic equipment connected over HDMI with the TV's remote control.

TOP SUB $2,500 HDTVs

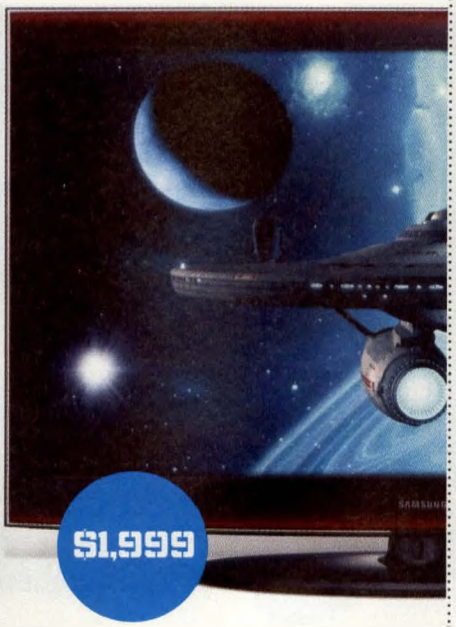


LG 50-inch 50PQ60D

@ www.lge.com.au

100Hz was one of the major technologies that differentiated the high-end LCD HDTVs, and this year it's finding its way to more of the mid-range models. In a classic case of one-upmanship, LG has introduced 600Hz Sub-Field Driving technology to all of its 2009 plasmas, but don't be fooled by the numbers — it's not the same technology used in LCDs to increase the video framerate. Rather than interpolate new frames, LG's FluidMotion technology displays the original frame in 12 subfields, which increases the TV's response time to 0.0001 milliseconds.

We're a bit sceptical about the need for the FluidMotion technology, given that plasmas aren't prone to the same motion blur problems that plague LCDs. Still, it's good to see the technology debut at such an affordable price point. This 50in 720p plasma uses the same Edge design from LG's previous generation of HDTVs, encasing the screen and bezel behind a single layer of glass and hiding the speakers for an ultra-sleek look. It's also got the same USB 2.0 port for playing photos and MP3s, and adds the ability to play DivX files directly from attached storage devices. Other features include a 2,000,000:1 dynamic contrast ratio, three HDMI ports and a 20-degree swivel stand.



Samsung A650A1

@ www.samsung.com/au

A welcome change from the generic piano black finish of most HDTVs, the 650 features a lovely dark red finish that Samsung refers to as its 'Crystal Design'. This takes the standard glossy black and infuses it with a red hue using the same dual injection technology used in car manufacturing. The end result is a highly distinctive TV that looks stunning even when it's not playing anything.

But it's not just a pretty face. This Full HD LCD — one of the flagship models from last year's range — offers 100Hz technology, which doubles the amount of frames shown on the screen per second to make movies more fluid and life-like. Samsung's FilterBright technology is used to minimise glare on the screen during the day, and the Digital Natural Image Engine Pro image processor works behind the scenes to optimise all of the colours, detail and contrast that it delivers from both standard and high definition sources. It's also got a dynamic contrast ratio of 1,000,000:1.

The 650 offers three entertainment modes that are optimised for watching sports, movies and gaming, 24p playback to watch movies at the film's original frame-rate, a built-in HD tuner and a generous four HDMI ports.

Toshiba Regza RV550A

@ www.toshibaav.com.au

The REGZA RV550A laughs in the face of the standard 8- and 10-bit video processors used in other TVs with its powerful 14-bit Power Meta Brain processor. Essentially, it means the RV550A can display more colours — the rub is that there isn't any equipment out there that can produce movies to this standard. The HDMI 1.3 spec only recently introduced support for 10-bit colour, and at present only high-end camcorders and video cameras are capable of producing 10 bit colour.

Still, there are lots of other features in this LCD that actually do make a difference when you're watching it. It's one of the only name-brand TVs at the 42in size that offers full HD, and it's got ClearFrame 100Hz for smoothing out high-motion sequences in movies and sports. Gamers will like the fast 6 millisecond response time and dedicated Gaming Mode, and there's a built-in HD tuner and eight-day EPG for those that like to watch free-to-air programs.

Specs-wise, the RV550A doesn't skimp on any of the essentials, with four HDMI inputs, dynamic contrast ratio of 18,000:1 (it's 1,400:1 natively), a 178-degree viewing angle, and an ambient light sensor that automatically adjusts the TV's brightness to match the room's lighting conditions.

TOP SUB $3,500 HDTVs

$3,399

Sony BRAVIA KDL40Z4500

@ www.sony.com.au

LG took the wind out of Sony's sails a little by introducing a range of 600Hz HDTVs in the same year Sony debuted 200Hz, but the two technologies are completely different. Motionflow 200Hz feature works by using algorithms to calculate three additional frames for every original frame in the video, with the aim of making motion look even smoother and clearer than was possible with 100Hz. This works hand-in-hand with Sony's new Image Blur reduction feature, which goes through the original video frame-by-frame to improve the sharpness and detail before handing it over to Motionflow.

When it comes to playing digital content from a variety of sources, the full HD Z4500 is well ahead of the game. It's DLNA certified, which means it can stream photos and music (but not video) from computers and other devices that support it. You can also connect digital camera and thumb drives to the Z4500's USB port to display pictures in high definition, and there's a dedicated Picture Frame Mode for playing a slideshow of images on the TV when you're not using it. Finally, the same USB port can be used with a range of Digital Media Port accessories for connecting things like iPod docks, Bluetooth AV receivers and wireless network audio adapters.

$3,299

VIERA TH-46PZ800A

@ www.panasonic.com.au

If you're after a Full HD television that'll see you through to your golden years with the same brightness and vivid colours that it had when you first got it, the 'Long Service Life' guarantee on the TH-46PZ800A should fit the bill nicely. Panasonic claims the plasma panel is good for 100,000 hours before its brightness is reduced by half — the equivalent of more than 30 years if you watch the TV for a solid eight hours a day.

Whether it'll actually look any good compared to the HDTVs in 20 years time is another question, but in the current day and age, the VIERA TH-46PZ800A's picture quality is one of the best you can get at this price point. Panasonic's Real Black Drive system, Revised Filter and 1,000,000:1 dynamic contrast ratio (30,000:1 native) produce some of the deepest black levels in the business, and colour reproduction is amazing thanks to the Advanced 3D colour management technology and support for 134 billion viewable colours. The rest of the TH-46PZ800A's feature set is pretty standard: it's got three HDMI inputs, an integrated HD tuner, an SD card slot for displaying photos, a seven-day EPG and VIERA link for controlling other Panasonic devices that are connected over HDMI with the TV's remote control.

$2,999

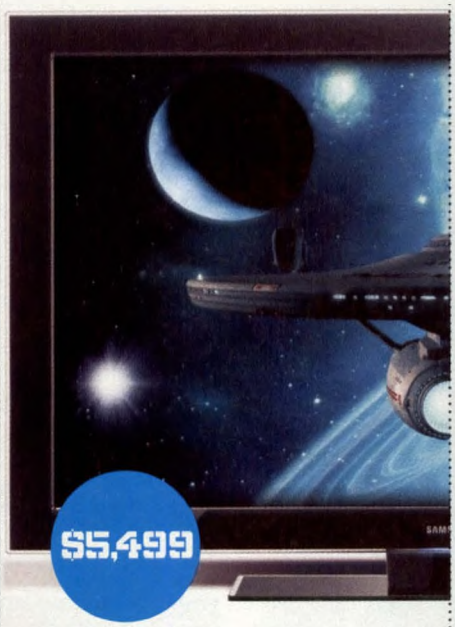
Sharp AQUOS LC-42D77X

@ www.sharp.net.au

The LC-42D77X puts a modern twist on the classic piano black finish with a soft blue stripe along the bottom of the frame, almost giving the impression of a glowing LED light. The bezel around the screen is also thinner than most, but in other regards it's pretty much a standard-issue flat-screen, with square edges, a round base and a swivel stand. The 42-inch AQUOS LC-42D77X LCD is new to Sharp's 2009 range of HDTVs, with full HD playback, Fine Motion Advanced 100Hz technology, and a new ASV (Advanced Super View) superlucent LCD panel that increases brightness and clarity. It also offers 24p playback for reproducing movies at the same framerate used by film and a dynamic contrast ratio of 50,000:1.

Sharp puts an emphasis on sound quality as well, with simulated surround sound offered by the SRS TruSurround XT speakers, a built-in digital amplifier and a bass enhancer. Connectivity-wise, the AQUOS LC-42D77X offers three HDMI, three composite, and two component inputs, as well as a PC input for connecting your computer. If you've got any compatible Sharp products connected over HDMI, you can also take advantage of the AQUOS Link feature for one-touch operation from the LC-42D77X's remote control.

TOP OVER $3,500 HDTVs



Samsung LA46A950

@ www.samsung.com.au

Samsung's flagship Full HD LCD doesn't skimp on any of the bells and whistles. Along with Samsung's Series 7 and 8 LCDs, it's currently the only range of HDTVs in Australia that offers live internet content by way of RSS feeds. It connects to the internet via Ethernet, and displays breaking headline news, weather and stock information in a strip along the bottom of the screen that you can view at the same time as watching a movie.

The 950 also comes with a library of built-in content, including fitness programs, games and recipes that you can update for free via the Samsung web site. The WISELINK Pro USB port lets you play photos, music and videos from a connected flash drive, and it's DLNA-certified for streaming the same content over a network connection from other devices that support it (including computers and mobile phones). It uses the same dual injection Crystal Design finish of the 650 series, only in a more demure black colour with a carbon fibre pattern. The Smart LED backlight improves on the traditional CCFL 'always-on' backlight by automatically adjusting the brightness levels on different parts of the screen as needed, resulting in a dynamic contrast ratio of 2,000,000:1 and black levels to rival the best plasma TVs.

Sony BRAVIA KDL40ZX1

@ www.sony.com.au

The ZX1 has the privilege of being the world's slimmest LCD, measuring an anorexic 9.9mm — thinner than an iPhone 3G. This amazing feat of engineering is accomplished by using side-mounted LEDs and moving most of the inputs and the digital tuner to an external media receiver box, which wirelessly feeds the signal to the TV using Sony's BRAVIA 1080 Wireless technology. Not only does this result in a wafer-thin profile, but it also means there isn't a tangle of unsightly cables coming out the back of the TV (save for the power cable).

Unlike the BRAVIA Z4500, the ZX1 uses the last-generation Motionflow 100Hz technology (still impressive compared to 50Hz HDTVs), but it adds an image blur reduction feature on top of that to sharpen each original frame before processing it with Motionflow. It also uses the updated BRAVIA Engine 2 signal processor and offers 24p True Cinema playback, four HDMI inputs (one on the TV and three on the media receiver) and S-Force Front Surround Sound. The USB port can be used for displaying photos in high definition from a camera or flash drive, and it includes a dedicated picture frame mode — great if you've got the ZX1 hanging on a wall — to display your favourite photos or six pre-loaded images.

Pioneer KURO PDP-LX509A

@ www.pioneer.com.au

The 50in PDP-LX509A may not be the thinnest HDTV, offer live content feeds off the internet, or look exceptionally different to other HDTVs, but what it's lacking in frills, it more than makes up for with stunning picture quality. Pioneer plasmas are renowned for offering the best black levels, and this ninth-generation panel builds on that reputation with black levels that are over five times better than Pioneer's previous-generation model.

Still, it's got a couple of features beyond the basic visual and audio functionality. An Ethernet port on the back lets you stream HD movies, music and photos from other DLNA-certified devices on the network, a USB port is on-board for displaying photos from a connected digital camera or flash drive, and there's an Optimum Video mode that adjusts the TV's settings based on lighting and the type of content that's being played.

Unfortunately, free home delivery and installation isn't included in the purchase price anymore, and Pioneer has announced that it will be exiting the TV business globally by March 2010. Pioneer plasmas sold until the end of the year will still be supported by a five-year warranty, with spare parts and after sales service available for at least another seven years after that.

iPOD YOUR HOME

Throw away your headphones and start a party!
Jenneth Orantia looks at iPod sound systems for every budget.

Home audio systems used to be about playing CDs on a set of good-quality speakers. Now, with more and more music stored on portable media players, the focus has shifted to making those — and the iPod in particular — the centrepiece of any sound system. The transition makes sense from a convenience perspective. While standard audio CDs only fit an album's worth of music (10-15 tracks), an 8GB iPod nano can fit up to 2,000 tracks, with music organised by tags and playlists. Why shuffle through 200 CDs when you can find a particular song, artist, album or music genre in seconds?

Newer CD players can play digital tracks that have been burnt to the disc as files, but even then you've only 700MB to work with, and you don't get the benefit of tag sorting and playlists when you're playing it on a stereo system. If you've got an iPod, you're spoiled for choice when it comes to speaker systems. Even companies that make their own portable media players, like Creative, Sony and Philips, have come out with iPod-compatible speakers, and there's a broad range of form factors, features and pricetags.

If you don't have an iPod, you can still take advantage of all the iPod speakers out there by using the auxiliary input — an audio jack on the speaker system that you connect to your portable media player's headphone jack using a 3.5mm male-to-male adapter. The downside to connecting a portable media player using the auxiliary input is that you can't control it with the speaker's remote control. If that's a deal-breaker, it's worth checking whether there are speaker accessories specifically designed for your player — usually, the vendor offers one or two per model.

FORM FACTORS

iPod audio systems come in a wide range of shapes and sizes, and finding the best one for your needs largely depends on your usage patterns. If you're a regular music listener and like to turn your music up loud, a micro hi-fi with larger speakers and a built-in amplifier and sub-woofer should meet your needs, whereas infrequent users would probably be happy with a smaller dock.

A category that's become increasingly popular is alarm clock radios with iPod docking stations. These function like any other clock radio, but with the added ability to charge your iPod and use your iPod's music as an alarm sound. The sound quality on these speakers is typically average, so if you're a music lover, you may think about investing in an iPod alarm clock radio and separate iPod speaker system. As a general rule of thumb, the more you pay, the better the sound quality will be, but there were many instances where this wasn't the case. The Geneva Model L, for instance, was the most expensive speaker system we reviewed at $2,399, but the Unison i-X5 had far better sound quality for almost a fifth of the cost. Nor are name brands a guarantee of quality: Sony was probably the best-known brand covered here, but the two speakers we reviewed from it stand out as having tacky hardware designs and poor audio performance.

COMPATIBILITY

iPod speakers are compatible with any full-sized iPod with a dock connector (anything released from 2003 onwards) and all iPod nanos. If you've got an iPod shuffle, you'll have to settle for using the auxiliary input. Most speakers offer dock inserts for each of the different iPod sizes and generations to ensure a secure fit, and these typically clip on top of the docking connector. To play music, all you have to do is slide your iPod into the dock so that

What do I look for?

In a good iPod dock . .

Firstly you have to decide what you want your iPod dock to do. Alarm clock docks have very different functions to high-end speaker docks, which in turn perform a different role to mini hi-fis. Once the role of the dock is decided, there are a few things to consider...

GOT AN IPHONE?
Not all iPod speakers are compatible with iPhones — look for the 'Works with iPhone' logo.

SPEAKERS
iPod speakers come in all shapes and sizes — think about where you'll be putting the speaker and choose the form factor accordingly.

VIDEO
Some speakers offer a video-out function (S-Video or composite) for outputting video to TV — check the connections at the back.

ON THE MENU
If you want to be able to navigate between albums, genres, artists and playlists with the remote control, check that it's got Menu, Enter and up and down buttons.

REMOTES
Remote contols that use RF instead of the more common infra-red let you use your iPod from another room.

KEEP CONTROL
Constantly misplacing your remote controls? Check that buttons for all the key features are on the speaker system itself.

SCREEN
Speakers with an LCD screen usually double as alarm clocks.

UNDER REVIEW

Portable iPod speaker docks

iPod alarm clocks

Entry-level and mid-range iPod docks

High-end iPod speaker docks

Works with iPhone speaker docks

Micro hi-fis with iPod docks

the connector fits into the iPod's port on bottom. You can then use the controls on the iPod to press play, or use the speaker's buttons on the remote control.

iPhones are a special case. While they have the same 30-pin dock connector as an iPod, the phone antenna can cause audio interference with the speakers unless they're properly shielded — that low-pitched buzzing sound you sometimes hear over car speakers when a call comes in on your mobile. Speakers certified to work with the iPhone have a 'Works with iPhone' logo on the packaging.

You can also tell whether a speaker is compatible with the iPhone by seeing if a message appears when you dock it. For speakers that don't have the 'Works with iPhone' certification, a dialog box will appear on the iPhone's screen saying: "This accessory is not made to work with iPhone", with a recommendation that you put it on airplane mode to reduce audio interference.

It's certainly something to look out for if you're shopping for iPhone speakers, but we found that some of the higher-end speakers that didn't have the 'Works with iPhone' logo, like the B&W Zeppelin and Harman/Kardon Go + Play, didn't produce any interference while playing music from the iPhone.

REMOTE CONTROL

Almost all iPod speakers come with a remote control adjusting the volume, skipping through tracks and accessing other features without having to use the iPod's controls. The functions that are available on the remote vary between speakers. At a minimum, you'll be able to play, pause, skip backwards and forwards between tracks and adjust the volume. If the speaker system has other functions like a CD player and FM radio, you'll also be able to use them from the remote control.

The majority of speakers also allow for full iPod navigation from the remote control using Menu, Enter and up and down buttons, letting you navigate between all of the albums, playlists, genres and artists on your iPod. Other handy functions to look for are bass and treble controls and equaliser presets, but there aren't many systems that let you adjust these controls. Another thing to check for is whether the remote control uses infra-red or RF for communicating with the speaker. Most use infra-red, which means the speaker has to be in line-of-sight when you use it, but the ones that use RF work through walls, so you can use the remote control while the speaker is in another room.

VIDEO OUTPUT

If you use your iPod or iPhone as a video player, it's worth checking if the speaker system has an S-Video or composite output for playing videos through your TV. S-Video is the higher-quality connection of the two, but if you've got an older TV that doesn't have an S-Video input, composite (or the yellow connector in an RCA cable) will do the job nearly as well.

Playing videos on your iPod isn't as plug and play as it is for music. On your iPod, go to 'Videos > Video Settings', and turn the 'TV Out' setting to On. Make sure the TV Signal is set to PAL. The best setting for widescreen depends on the video you're playing — TV shows typically use a 4:3 ratio, in which case widescreen should be turned off, but movies are usually displayed in 16:9 widescreen. Once your iPod's TV out setting is switched on, you can navigate to the video you want to play on your iPod, and once it starts, the video signal will be output to your TV (although the sound will still come from the iPod speakers).

PORTABLE IPOD SPEAKER DOCKS

Bose SoundDock Portable

@ www.bose.com.au
✔ Excellent sound quality; rechargeable battery.
✖ Expensive; bulky; no S-Video output.

If you insist on audiophile sound quality on the go — and don't mind paying a hefty premium for it — the Bose SoundDock Portable is the speaker to set your sights on. It's virtually the same system as the SoundDock Series II, but for the extra hundred dollars you get a rechargeable Lithium-ion battery pack (good for around 10 hours of music at normal volume levels) and a retractable iPod dock that rotates 180-degrees out from the base like a carousel.

The 'Portable' in this case refers to the fact that it can run off a battery pack. Size-wise, it's too large to carry in a satchel or handbag, and it weighs a solid 2.37kg. That said, most portable iPod docks sacrifice sound quality to make the system as light and compact as possible — Bose goes in the complete opposite direction. The pay-off comes when you start playing music on it, especially if your tunes are encoded at the higher 320Kbit/s bitrate. The Prodigy's 'Smack My Bitch Up' dance track had a nice kick to it, with punchy bass and a clear treble, and the Bose is powerful enough to fill a room at top volume. For the asking price, though, we expected to hear more detail and a wider soundstage.

JBL OnStage IIIP

@ www.conexus.com.au
✔ Full function remote; compact; good value.
✖ Struggles at higher volumes.

The OnStage IIIP offers a better compromise between portability and audio performance. It's not as powerful as the SoundDock Portable, and pushing the volume up brings out the tinnyness in the low/mid-range, but it's much more compact and cheaper than the Bose.

The IIIP can be powered by AC or six AA batteries, the latter of which is good for up to 12 hours of continuous music playback. Its flying saucer shape is distinctive to the JBL brand, but its more than just aesthetics — as the speakers wrap all the way around the base's circumference, it pushes the sound outwards and allows for a wider soundstage than is possible with the traditional front-firing speakers. It doesn't have a subwoofer, but the Odyssey drivers give the impression that there is one — playing bass-heavy tracks from Daft Punk and the Prodigy reveal that the low end really holds well for the IIIP's small size. The half-kilo carry weight and bundled travel bag make the OnStage IIIP a good choice for bringing along to a picnic, but the exceptional sound quality, stylish design and full-function infra-red remote control means it functions just as well as a speaker dock for the bedroom.

Memorex mini-Move Boombox

@ www.memorex.com.au
✔ Decent sound quality for the money; durable.
✖ Sounds more like a mono speaker; tinny treble.

Shaped like a small handbag, Memorex is catering specifically to the teenage-girl demographic with its latest portable iPod speaker. The miniMove Boombox is available in pink, black, blue and grey to match the corresponding iPod nanos, but it works with any iPod with a dock connector.

As the cheapest speaker dock in this category, we weren't expecting much, but we were pleasantly surprised at the results when we ran it through our test playlist. The miniMove's maximum volume is loud and surprisingly clear for a low-end speaker, although the stereo image gets jumbled together and the high-end is too tinny for richly-layered tracks. It's got more guts in the low end, but it lacks that real bassy kick that you'd want for dance music. Adjusting the EQ using one of the four presets makes a big difference, but we wish Memorex had labelled them more meaningfully than EQ1, EQ2 etc.

The miniMove Boombox is well-designed for outdoor use thanks to its handle and sturdiness. It comes with a remote control with a belt clip, so you don't lose it, but even if you do, there are buttons for all of the functions on the speaker itself.

IPOD ALARM CLOCKS

$189

5/10

Sony Dream Machine CD3iP

@ www.sony.com.au

✔ Built-in CD player; large digital time display.

✖ Mediocre sound; tacky design; too many buttons.

If you're purely after a bedside alarm clock that works with your iPod, the Sony Dream Machine ICF-CD3iP is one of the more versatile options. In addition to waking up to a track on your iPod, you can choose to greet the day with an AM/FM radio station, a buzzer, or a CD thanks to the built-in CD player. A retractable iPod/iPhone dock slides out from the side, and the front half folds open to insert CDs.

However, inferior sound quality means it's not so good as an everyday speaker system. The speaker on the ICF-CD3iP didn't sound much better than a cheap radio. The instrumental layers in Ray Charles' 'Unchain My Heart' sounded flat and one-dimensional, while the dynamic range in the Beatles' 'Dear Prudence' was virtually non-existent.

The ICF-CD3iP could've redeemed itself with an up-market hardware design to match the iPod's sleek aesthetic, and here too it came up lacking. The round plastic casing looks and feels tacky, and Sony has covered almost every available surface with buttons. On the one hand, if you lose the remote control, you can still access all of the ICF-CD3iP's functions; on the other hand, it makes the system look overly complicated to use.

$170

8/10

Cygnett GrooveNeo

@ www.cygnett.com

✔ Large time display; decent sound quality.

✖ Hard to operate; buttons aren't backlit; low volume.

The GrooveNeo's design is old-fashioned: a plain black box with rounded corners, a large red digital time display that dominates the front and a cool blue LED light underneath. It's a straightforward formula that works, and we found ourselves preferring the design of GrooveNeo to the other two alarm clocks for its sheer simplicity. It's not so simple to operate though — with only six buttons on the top (not including the power button), we found ourselves having to constantly refer to the manual to figure out how to move between different functions. The buttons don't have a backlight for using it in the dark, and there aren't any presets for the AM/FM radio.

The GrooveNeo's maximum volume isn't exceptionally high, but the sound it produces has better definition than the other two alarm clocks. Daft Punk's 'Robot Rock' was punchy and clear (albeit lacking a little in the low-end), and Earth's 'Engine of Ruin' produced a warm and multi-layered sound that could be turned up to maximum volume without losing any clarity. It also did justice to rock tracks like 'Ride' by The Vines — there was a low fuzz and slightly muffled sound at higher volumes, but the guitars and vocals were still sharp.

$540

7/10

JBL OnTime 200iD

@ www.conexus.com.au

✔ Easy to use; set up to four alarms; powerful.

✖ Treble and bass reproduction; expensive.

Like the OnStage, the JBL OnTime 200iD uses a saucer-shaped design to push the sound outwards and create a fuller and more dynamic soundstage. Whether it's $500 worth of sound quality is another question. In our tests, the significantly cheaper Cygnett GrooveNeo produced better overall sound definition, although the OnTime 200iD could be cranked up to higher volumes. The 200iD produces a warm mid-range, but it can't cope with the dynamic range of complex tracks — the treble in particular sounded too brash and lacked texture. Bass-heavy tracks suffered the most, with the almost non-existent lows leaving it sounding thin and tinny.

The 200iD's redeeming quality is its user-friendliness. The LCD screen uses text menus to configure up to 10 radio presets and four alarms, and for each alarm you can elect to wake up to your iPod, the radio, an external device connected to the auxiliary input or a buzzer. A prominent snooze button sits front and centre, and the screens and buttons both have a bright blue backlight so you can operate the dock at night time. It also comes with a remote control that lets you access all of the iPod's functions.

ENTRY-LEVEL AND MID-RANGE IPOD DOCKS

Logitech Pure-Fi Express

@ www.logitech.com.au
✔ LCD screen; big volume knob; versatile.
✖ Mediocre sound; can't remotely navigate iPod.

The Pure-Fi Express Plus doesn't offer any surprises when it comes to sound quality — it's an entry-level speaker dock, and it's matched by entry-level audio performance. The mid-range holds well for most tracks, but the treble and bass falls apart at either end. The piano movements in Lou Reed's 'Perfect Day' lacked subtlety, and the synths in Madonna's 'Like a Virgin' were too crisp in the high end. Bass had a tendency to bottom out, and it produced heavy distortion.

The upshot of the Pure-Fi Express Plus is that it's versatile. We've stuck it into the entry-level and mid-range speaker docks category, but it could've just as easily gone into the portable, alarm clocks and works with iPhone categories. Design-wise, the Pure-Fi Express Plus isn't much to look at, but we like the retro orange glow around the volume knob and matching orange lettering on the LCD screen. The remote control is smaller than average, but it's thicker and uses the same clickwheel controls found on the iPod classic and nano. You can activate shuffle and random via the speaker dock or remote control, but you can only navigate through the iPod's menus on the iPod itself.

Unison i-X5

@ www.cygnett.com
✔ Powerful sound; performance; S-Video and USB.
✖ Weak treble; can't adjust bass, treble or EQ.

The i-X5 offers the same big sound of a micro Hi-Fi, only without the overhead of a CD player and AM/FM radio. It consists of two bookshelf speakers and an iPod dock, and while it's more expensive than any of the micro hi-fis we reviewed, the sound is considerably better. The bass resonated powerfully and it held the tone of guitars and vocals in the high-end.

It has a tendency of emphasising the bass above everything else, however, which made piano medleys sound heavier and caused light tracks to be drowned out by the deep, resonating lows. Controls for adjusting the bass, treble and equaliser could've remedied this, but instead you have to rely on the iPod's EQ presets, which don't work all that well.

If you want a system with a CD player and AM/FM radio, the TDK NX-04CD is the way to go, but if you simply want an affordable iPod speaker for the bedroom or living room, the Unison i-X5 is definitely the better choice. The iPod dock has S-Video and USB outputs for connecting it to a TV and PC, there's an auxiliary input on one of the speakers for connecting other music devices, and all the cables you need for connecting the system to other devices are thoughtfully included.

Bose Sound Dock Series II

@ www.bose.com.au
✔ Well-rounded audio; loud volume.
✖ Poor stereo separation; no S-Video output.

Ultimately, we preferred the Unison i-X5 for the entry-level and mid-range speaker systems category, but the SoundDock Series II is the more well-rounded of the two. Daft Punk's 'Robot Rock' track really packed a punch and produced a big sound, and Lou Reed's piano-driven 'Perfect Day' resonated well in the low end and was properly balanced all the way through. Where it loses out is on tracks that make heavy use of the left and right channels to produce different layers — 'Dear Prudence' by The Beatles lost the stereo separation and detail that we were able to reproduce on other, better speakers.

Design-wise, the SoundDock Series II is almost indistinguishable from the SoundDock Portable. The remote control lets you skip tracks, adjust volume and move between playlists, but you can't navigate through the iPod's menu system. There's an auxiliary input on the back for connecting other portable media players and sound sources, but there's no S-Video output for connecting it to a television. The SoundDock Portable doesn't have one either, but for a mid-range speaker dock designed for use in the home like the Series II, the omission is less forgiveable.

HIGH-END IPOD SPEAKER DOCKS

Altec Lansing octiv AIR M812

@ www.alteclansing.com

✔ Wireless dock; strong bass; full dynamic range.

✖ Bass bottoms out.

The octiv AIR M812 offers something different to the classic iPod dock design. The single speaker and iPod docking station looks like a similar concept to the Unison i-X5, only the dock and speaker connect to either wirelessly over the 2.4GHz spectrum — the same as used by 802.11b/g wireless networks — up to 30 metres away. The dock also has a built-in FM tuner and auxiliary input, and all the functions can be operated by a remote control.

In practice, we're not sure how much benefit you'll get from having your iPod in one room and the speaker in the other, but if you want to have the same song playing in different rooms of the house, you can add up to seven optional speakers at $599 a pop. There's also a dual speaker package available for $1,099, and the speakers can be wall mounted with brackets that are sold separately. The octiv AIR produces a warm and well-balanced sound, and it's best for music that has a lot of dynamic range, like songs from the Beatles and Lou Reed. At higher volumes, the low-end bottomed out in the dance tracks we threw at it, but it was otherwise capable of producing a strong and booming bass.

B & W Zeppelin

@ www.bower-wilkins.com

✔ Unrivalled audio performance; design.

✖ Expensive; buzzing in low bit-rate songs.

With the Zeppelin, Bowers & Wilkin set out to produce the best iPod speaker system around — a lofty goal given the hundreds (or possibly thousands) of speaker docks currently around. After spending some quality time with the Zeppelin, however, we can't imagine a system with better sound quality. It can handle pretty much anything you throw at it, and it played every song in our test playlist with beautiful precision. The tone was spot-on, with the wide soundstage catering perfectly for richly-detailed texture, spreading out just far enough to keep both stereo channels in perfect harmony. 'Reptile' by The Church sounded crisper and clearer than we'd ever heard it before, and a piano medley by Brian Jonestown Massacre was so deeply textured and dramatic that we were nearly moved to tears. Daft Punk's 'Robot Rock' maintained its driving force even at maximum volume, and the bass resonated in powerful waves without the slightest crackle.

The only downside is that it magnifies the imperfections in lower bitrate tracks and low-fi recordings. To get the most out of the Zeppelin, you're best off with 320Kbit/s tracks or lossless formats.

Geneva Model L

@ www.genevalab.com.au

✔ Minimal design; sound quality; built-in CD player.

✖ Expensive; poorly-designed remote control.

It's not cheap, but the sleek and minimalist cube design of the Geneva Model L matches the iPod better than any other speaker here. We can see it being a popular choice for trendy hotels, fashion boutiques and upmarket hair and beauty salons.

We were expecting the Model L to be more about style than substance, but the speaker impressed us with its solid sound quality. At maximum volume, it's loud enough to shake the room, although the soundstage and treble suffers. The Model L worked best with classical music at moderate volume — richly-textured tracks weren't reproduced with as much detail.

The iPod docking station is hidden underneath a flap at the top, with a slit behind it for inserting CDs. There's also a built-in FM tuner, and all three functions are operated from the full-sized remote control.

We wish Geneva had made more of an effort with the remote control — it looks cheap, especially compared to the speaker, the controls are overly complicated (with duplicated buttons for iPod, CD and FM), and you can't use it for navigating through the iPod's menu system.

'WORKS WITH IPHONE' SPEAKER DOCKS

$219

6/10

Sony ZS-S4iP

@ www.sony.com.au

✔ Can run off batteries; built-in CD player.

✖ Middling sound quality; weak volume.

Sony puts a modern spin on the classic '80s boombox by replacing the cassette player with an iPod docking station. Instead of looking retro chic and trendy, however, the ZS-S4iP simply looks dated, and the audio quality doesn't do anything to make up for this.

The ZS-S4iP has a Mega Bass function that gives an extra kick to tracks that need it — turned off, bass is virtually non-existent, and tracks sound hollow and weak. When it's turned on, however, it artificially adds the low-end in at the expense of texture and clarity. Tracks played through the top-loading CD player sounded much better, as did the 320Kbit/s MP3s in our playlist. Also, for a product that refers to itself as a boombox, the maximum volume is certainly weaker than you'd expect.

The cartridge-style iPod dock is certified to work with the iPhone, and music automatically pauses when a call comes in. You can't conduct the call while the iPhone is docked, however, which means you need to eject it from the cartridge to answer it. Like the old boomboxes of yore, the ZS-S4iP can be powered by AC or six C batteries, and there's a built-in handle that folds up from the top.

$399

8/10

Altec Lansing T612

@ www.alteclansing.com

✔ Bass and treble presets; attractive design.

✖ Struggles with too much bass; easy to tip over.

The T612 has a similar design to the Bose SoundDock, with a rectangular speaker grille and fixed iPod/iPhone docking station sitting front and centre. It feels like a quality product, but unlike the Bose, it's easy to tip over.

Presets are available for enhancing the bass and treble, but for some reason you have to choose between the two: more bass, more treble, or neither. Overall, we were pleased with the T612's sound quality: the guitars and vocals in The Beatles' 'Dear Prudence' were sharper than they were in the other two 'works with iPhone' speakers, and the bass was strong enough to carry the song. It can't handle too much bass though — dance tracks bottomed out, and the T612 didn't deliver the booming low-end we were hoping for.

When a call comes in, the music pauses and the iPhone's ringtone sounds over the T612's speaker. Using the iPhone's speakerphone function, you can answer the call while it's docked, but the caller's voice is reproduced on the iPhone's speaker rather than the T612's. An auxiliary input is located on the back for connecting other music players, but sadly there's no S-Video output for hooking the iPod up to a television.

$400

6/10

iHome iP47

@ www.conexus.com.au

✔ Speakerphone; uses batteries; shows calls on LCD.

✖ Poor microphone; mediocre sound quality.

The iP47 takes its 'works with iPhone' certification more seriously than the others and doubles as a speakerphone. It connects to the iPhone wirelessly over Bluetooth to relay calls through the iP47's speaker — even when it's sitting in the docking station. The iP47 can also stream music wirelessly over Bluetooth, but the iPhone doesn't support it, so it needs to be physically docked to play music. In that sense, even though it's marketed as a Bluetooth clock radio and speakerphone for iPhones, the iP47 works better for mobiles that support the hands-free and A2DP Bluetooth profiles.

Its feature list is impressive; its performance not so much. You can make calls on the iP47 while the iPhone is in your pocket or another room using the retractable dialpad, but callers had trouble hearing us. An LCD screen in the middle shows incoming caller ID, but it doesn't sync with the iPhone's contacts, so you only see the numbers of people calling rather than their name. Tracks with less than a 320Kbit/s bitrate sounded tinny, and while the mid-range is reproduced well, there's hardly any bass and the high-end can be too abrasive for rock tracks.

MICRO HI-FIs WITH IPOD DOCKS

Philips DC146

@ www.philips.com.au
✔ Compact; loud maximum volume; affordable.
✖ Muffled sound; no video output; distorted bass.

There's a lot of appeal in an all-in-one bookshelf system that can play CDs, FM radio and your iPod, but the Philips DC146 seems to go out of its way to look as bland as possible. It feels like Philips has rehashed a decades-old design and just added a retractable iPod dock to the bottom. It's even got a dead space below the button controls (hidden behind the iPod in the product photo) that we're sure used to house a cassette deck. There's no video output, but a headphone jack and auxiliary input can be found on the back.

The DC146's twin speakers can fill a room quite easily, but that's probably the best thing it's got going for it. Regardless of the music genre, the DC146 produced muffled-sounding music, almost as if a blanket had been thrown over the speakers, and the low-end in particular distorted at high volumes. Treble also hit a wall, especially noticeable with soul and rhythm and blues tracks like Ray Charles' 'Unchain my heart'. Overall, the difference between the Philips and the Sharp comes down to price, and given the Philips is almost two hundred dollars cheaper, it's definitely the more attractive of the two.

Sharp XL-DK257NH

@ www.sharp.net.au
✔ Six EQ presets; video output; powerful amplifier.
✖ Obnoxious flashing light; mediocre sound.

Whereas the Philips DC146 hides discretely in a corner, the Sharp XKDJ257NH takes the opposite tack and demands attention — even after you've turned it off. Switched on, a blue ring surrounds the volume knob, which can look cool or dated, depending on your preference. Switched off, the blue glow flashes on and off repeatedly, and scrolling text on the screen tells you about the different EQ settings and built-in X-Bass system — fun for the first day you have it, obnoxious and annoying forever after.

Despite the plug for the Sharp's X-Bass system, it lacks the necessary punch for hard driving dance tracks, and instrumentals came off sounding flat and one-dimensional. The XKDJ257NH's amplifier can produce a powerful 160 watts of total RMS, but at maximum volume there's a lot of distortion and fuzziness. It offers a few more features over the Philips, like AM radio, S-Video and composite output and six equaliser presets, but it's not enough to justify the big price difference.

Even if video output is a must-have, the TDK system offers that — and considerably better sound quality — for cheaper.

TDK NX-04CD

@ www.tdk-media.com.au
✔ Gorgeous design; plays music off USB and SD.
✖ Low bitrate tracks don't sound as good; display.

It's a shame that iPods don't come in white anymore, because the NX-04CD would otherwise be a perfect match for it. Instead of recycling the same tired old designs from two decades ago, the NX-04CD opts for a modern and minimalist aesthetic, using ultra-thin speakers that look more like picture frames and a small matching subwoofer. The CD player slides up and down mechanically, and the iPod dock is fixed to the right-hand side.

The NX-04CD's audio performance blew both of the other micro hi-fis out of the water. The vocals in Madonna's 'Like a Virgin' were crisp and the instrumentals well-defined, and the bass was reproduced in Lou Reed and The Beatles tracks without overwhelming the mid-range and treble. The inferiority of lower bitrate tracks is obvious at high volume, however: there's a big difference between 128Kbit/s and 320Kbit/s.

Gorgeous hardware design and excellent sound quality aren't the NX-04CD's only talents: it can also play music off USB drives and SD cards. Track name, artist and album are displayed in text on the small LCD screen, but you have to wait a few seconds into each track before the information appears.

exploding tech

NO. 34

This month we're exploding the GHT 2.1 Home Entertainment iPod speaker dock that boasts the sturdiest body and biggest bass of any iPod-compatible speaker dock we've tested thus far.

1. Left speaker.
2. Centrally located main subwoofer.
3. High-powered speaker magnets for a subtler sound range and extra volume.
4. Close up of the high-strength speaker cones.
5. Right speaker.
6. Thick, magnetically sealed body that gives strength while adding boost to the bass.
7. Docking mount connections
8. Adjustable iPod docking mount with controls.
9. Power transformer.
10. Main board with PC-style cooling.

FEATURES:

- Wireless remote control
- Dynamic bass boost
- 3D surround sound mode
- Active subwoofer
- AUX IN for a variety of audio and MP3 devices

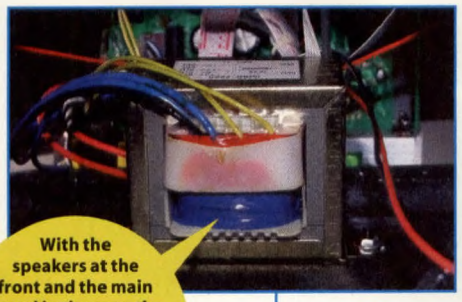
SPECIFICATIONS:

- Frequency response: 50Hz-18kHz
- Drive units: 5.5in + 2 x 3in
- Impedance: Sub 8. Sat 4
- Noise level: > 95dB
- Power Source: AC 240V
- Magnetically shielded
- Size: 500mm (L) x 335mm (W) x 245mm (H)
- Net weight: 7kg

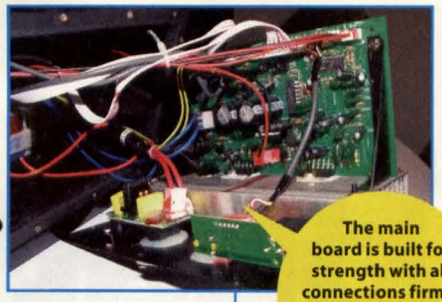
GHT 2.1 Home Entertainment iPod speaker dock

At a half a metre long and weighing in at a huge 7kg, this is one beast of an iPod dock. After it was gutted, we had to eventually give up trying to dismatle the 20mm thick body when we realised that nothing short of a circular saw was going to penetrate this speaker's hull. Packed within this piano varnished, magnetically shielded shell are two powerful cone speakers and one of the deepest subwoofers we've heard. The bass tones really vibrate out of the body giving a clear but deep sound. Simple, top-mounted controls consist of volume controls, bass boost (like you'd need it) and standby switches all of which are located right by the adjustable mounting dock that is capable of supporting any past or present model of iPod (except shuffles). Auxillary ports allow the option of connecting up to your existing home theatre or stereo setup. The GHT 2.1 Home Entertainment iPod dock is a stylish-looking piece of audio equipment that pumps good quality audio through a robustly made body (and puts the flimsier iPod docks to shame).

Christopher Zammit



With the speakers at the front and the main board in the rear, the centre of this beast is occupied by the transformer and a whole lot of empty space.



The main board is built for strength with all connections firmly glued in place to avoid them vibrating loose.

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For added functionality, there are audio-in ports on the rear so you can use it as a standard subwoofer...

...or you can use the video-out port to watch your iPod videos straight on your television.

PC-style cooling vents help keep the main board's temperature down in this well-sealed case.

Best tech

APC's independent reviewers point to the best technologies in the top-selling product categories each month. We only change products when a better one comes along. What you see here is the best technology available on the market right now.

Movers & Shakers

New tech on the move

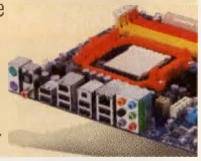
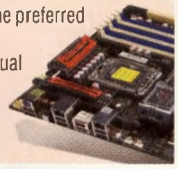
As PC builders get to know AMD's new Phenom II CPUs, the feedback is overwhelmingly positive. Not only do the new CPUs fix AMD's earlier problems, such as the cold bug, but they are also proving to be far more overclockable and work with less expensive motherboards and RAM than their Core i7 competitors.

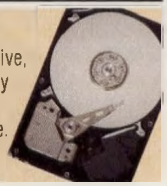
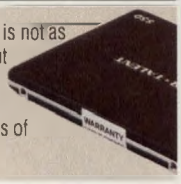
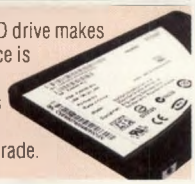
LOOK OUT FOR THESE

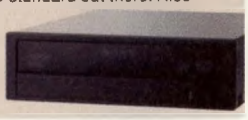
NEW

Products marked with this stamp are the latest additions to Best Tech.

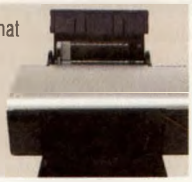
	NOTEWORTHY	BEST VALUE	BEST PERFORMER
GENERAL PC	**Dell Inspiron 530 E5200** If you're looking for value at the entry level, it's hard to go past Dell. And what's more, their Inspirons tend to come with special offers each month. **$1,199 > Dell > dell.com.au**	**TI Deluxe Phenom 810** NEW Great-value system offering both 2D power and 3D performance. This is a PC that is genuinely better value than any Core i7-based machine we've yet seen. Recommended. **$1,950 > Trinity International > ticomputers.com.au**	**Enspire Lightspeed X58** NEW While TI's AMD-based PC is a definitive example of great performance for a $2,000 PC, Enspire's Lightspeed provides almost a definitive version of a $4,000 PC. **$3,722 > Enspire Digital > enspiredigital.com.au**
HTPC	**Dell Studio One 19** NEW Hyper-stylish touch-screen PC from Dell; part of a trend of integrated machines designed for domestic areas and Windows 7. To be released next month. **$TBA > Dell > dell.com.au**	**HP Touchsmart IQ500** This is the closest the PC world has to the iMac, with a touchscreen that reminds you of the iPod touch. Great, no-fuss home theatre PC. **HP > $2,499 > hp.com.au**	**HP Touchsmart IQ800** HP has really nailed the concept with the IQ machines. The IQ800 is the closest thing to a merger of the PC and TV. Full HD screen, TV tuner, Blu-ray player. **HP > $3,799 > hp.com.au**
TINY PC	**Dell Studio Hybrid** PCs are clearly tired of being branded boring. But like Apple, Dell expects a premium for these designer pill-shaped low-power PCs. **$2,135 > Dell > www.dell.com.au**	**DreamVision Atom Mini PC** One of the first based on Intel's Atom dual-core CPU. Add a 2.5in hard drive and you have a mighty mite PC. **$399 > Pioneer > Pioneercomputers.com.au**	**ASUS Eee Box B202** ASUS has taken its enormously successful Eee PC concept and applied it to a desktop. Atom-powered, 1GB of RAM and 80GB drive. **$429 > ASUS > www.asus.com.au**

	NOTEWORTHY	BEST VALUE	BEST PERFORMER
CPU	**AMD Phenom II X4**	**AMD II X3** NEW	**Core i7 920**
	With a completely unlocked multiplier and sizable frequency headroom, this is the CPU that puts AMD back in the game against Intel.	Similar to AMD's hot Phenom II X4 quad-core but with a core disabled: all the benefits of quad-core for single-threaded applications, but at half the price.	The baby of the new Core i7 family blows away its Intel predecessors in anything requiring multi-processing. Needs X58 chipset motherboard.
	$420 > AMD > www.amd.com	**$240 > AMD > amd.com.au**	**$475 > Intel > Intel.com.au**
MOTHER BOARDS	**ASUS P5QL-E Motherboard**	**Gigabyte GA-EX58-DS4**	**ASUS Rampage II Extreme**
	Most of the goodies of a good motherboard but at half the cost. Great performance, 400MHz overclocking, with speedy frontside bus and newer PCI 2.0 Express.	Want to get into Core i7 computing on a budget (relatively speaking)? This is cheapest X58 board for Intel's new CPUs. 	Pricey, but becoming the preferred board of overclocking enthusiasts. Even a casual overclocker will appreciate the features that come with it. 
	$130 > ASUS > www.asus.com.au	**$340 > Gigabyte > www.gigabyte.com.au**	**$700 > ASUS > www.asus.com.au**
GRAPHICS CARDS	**ATI 4870X2**	**HIS ATI 850 512MB**	**Gainward GeForce 295GTX**
	The GTX 295 just shades it in straight performance, but the ATI 4870X2 has a better price-to-performance ratio. Stable, cool, and drivers use GPU power.	A competitively priced allrounder with enough power for gaming, has HDMI support for 1080p, as well as openGL 2.1 and DirectX 10.1. And is quiet and cool.	The GTX 295 is the fastest card you can buy. Has best-in-class speeds, works with three-way SLI, and has Physx engine built in.
	$750 > AMD > www.amd.com.au	**$260 > Hightech > www.hisdigital.com**	**$800 > Gainward > www.gainward.com**
RAM	**Team Extreem Dark PC2**	**Corsair TR3X3G1333C9**	**OCZ PC3-12800 Gold**
	An aggressively-priced low latency DDR2 kit that packs a whopping 4GB across two sticks, more than enough for most gamers.	Corsair DDR3 memory is reliable and stable, using XMS technology heat spreaders to keep the memory chips cool. Long lifespan backed by Corsair's life time warranty.	Perfectly suited to the latest Core i7 processors, this DDR3 memory helps expand its overclocking headroom. Will support faster CPUs in future.
	$130 > Team Group > www.teamgroup.com	**$165 > Corsair > www.corsair.com**	**$599 > OCZ > www.ocztechnology.com**
PSU	**Gigabyte Odin 800W**	**Antec TP-550**	**Thermaltake ToughPower 1500W**
	Heavy duty PSU with modular cables and a very low failure rate. This unit is very quiet, but is larger than most ATX units, so the case gets a bit cramped.	Highly efficient, stable and reliable. It caters from gamers to energy-conscious users. With three +12V rails it evenly distributes power.	Delivering a monster 1,500 watts. If you're going to run high-end graphics cards in SLI or Tri SLI mode, this is the power unit you want, with 100 amps split across four rails.
	$230 > Gigabyte > www.gigabyte.com.au	**$150 > Antec > www. antec.com**	**$519 > Thermaltake > www.thermaltake.com**
COOLING	**Hyper Cooler Master TX2** NEW	**Thermolab BARAM**	**Thermalright Ultra120**
	Don't let the el cheapo price tag scare you off: the Hyper TX2 offers many of the features we usually only see in higher-end coolers.	Uses copper and aluminium and the positioning of the fins and heat pipes for maxium heat extraction and cold air flow throughout.	With six 6mm heat pipes and 52 aluminium fins, the Thermalright Ultra120 eXtreme 1366RT is widely regarded as the best Core i7 cooler on the market.
	$49 > Cooler Master > coolermaster.com	**$75 > Thermolab > www.thermolab.co.kr**	**$130 > Thermalright > www.thermalright.com**

	NOTEWORTHY	BEST VALUE	BEST PERFORMER
CASES	**Lian Li V2010** NEW In Lian Li cases function tends to brutalise form. We like it. The V2010 is just a square aluminium box, but great thermal performance, build quality and ease of use. $599 > Mittoni > mittoni.com.au	**Antec Nine Hundred Two** Antec has updated its classic Nine Hundred gamer's case, improving the already over-the-top cooling, and adding better cable managed and paint. $220 > Antec > www.antec.com.au	**Cooler Master ATCS 840** A huge all-aluminium, full-tower case. With four fans, removable motherboard tray, and support for two power supplies. $390 > Cooler Master > coolermaster.com
MONITORS	**Apple 24in LED Cinema** NEW More than just a screen; a docking station for Mac notebooks. Connected to a MacBook Air it acted as a display, USB hub, speaker and webcam. $1499 > Apple > Apple.com.au	**BenQ E2200HD** A 21.5in Full HD Widescreen LCD monitor offering 5ms Response Time, 1920x1080 resolution, Dynamic Contrast Ratio of 10,000:1, speakers, and HDMI input. $250 > BenQ > www.benq.com.au	**Dell UltraSharp 3008WFP 30in** The display that makes geeks go weak at the knees: 30in of bright, sharp 2,650 x 1,600 screen with a full complement of modern connectors. $1,899 > Dell > dell.com.au
INTERNAL HARD DRIVE	**Western Digital 2TB** Need more storage? Try the world's first 2TB hard drive. Part of the Green Caviar Green range, this 3.5in drive has four 500GB/platters and a 32MB cache. $469 > Western Digital > westerndigital.com	**Western Digital Caviar Black 1TB** A month ago this was considered a premium drive, but with prices falling why not get the best? One terabyte and 32MB cache. We bought it and love it.  $200 > Western Digital > www.wdc.com	**Western Digital VelociRaptor** Fastest mechanical drive with 300GB. Should be the primary drive for OS and apps on a performance system, with a big fat secondary slower drive holding all the data. $280 > Western Digital > www.wdc.com
SOLID STATE DRIVES	**Super Talent 0X SSD drive** The Super Talent drive is not as fast as Intel's, and about as fast as a mechanical Velociraptor — but it's as affordable as 128GBs of SSD gets right now.  $550 > Super Talent > www.supertalent.com	**OCZ Core Series V2 30Gb** The most affordable route to SSD/HDD computing is with something like this 30GB SSD drive from OCZ. $180 > OCZ > www.ocztechnology.com	**Intel X25-M 80 GB** The difference an SSD drive makes to system performance is amazing. If you can afford the X25-M, it's the equivalent of a major RAM/CPU upgrade.  $700 > Intel > www.intel.com.au
EXTERNAL HARD DRIVE	**WD My Book World Edition** WD is trying to make NAS more user-friendly with this new home 1TB NAS which provides Gigabit Ethernet, Wi-Fi connections and DLNA and UPnP streaming. $350 > Western Digital > www.wdc.com	**W D My Passport Elite** A 500GB portable drive that's fast, looks great and fits in your pocket – and best of all can be picked up for around $200 on the street. $200 > Western Digital > www.wdc.com	**Seagate FreeAgent Xtreme** Doesn't have RAID mirroring but still gives you 1TB of storage and Firewire, eSATA and USB 2.0. Plug it in and it's ready to go. Great price. $199 > Seagate > www.seagate.com
USB KEYS	**Kingston Data Traveler Blackbox** Kingston again! They set the standard in USB key drives. This one comes with software that encrypts its contents to FIPS 140-2 Level 2 standard. $140 > Kingston > www.kingston.com	**Kingston Data Traveler 150 32GB** A 32GB USB key that's virtually a portable hard drive — stick hours and hours of video in your pocket. Incredible. Supports Windows & Mac. $140 > Kingston > www.kingston.com	**Kingston Data Traveler 150 64GB** Kingston's 64GB drive takes all that's good with the 32GB drive and doubles it. Stick a bootable USB Linux, apps and masses of data on it like a tiny PC. $200 > Kingston > www.kingston.com

	NOTEWORTHY	BEST VALUE	BEST PERFORMER
OPTICAL BURNERS	**Sony DRUV200A** Doesn't burn to Blu-ray but can do virtually every CD/DVD standard out there. Also comes with Nero 8 software.  $59 > Sony > www.sony.com.au	**LG Blu-ray/HD-DVD Combo** Plays both Blu-ray and remaining HD-DVD discs, and also comes with a PowerDVD 7. Can be upgraded to support 6 channel audio. $170 > LG > www.lg.com.au	**Sony BWU3200S Blu-ray** Burns to just about every disc format, from Blu-ray (up to 8x) and DVD to CD. With a SATA interface it's easily installed and works with XP or Vista. $549 > Sony > www sony com au
NETBOOK	**ASUS Eee PC S101** One of the first netbooks to transcend utilitarian, the metallic mocha chassis makes it look a million dollars and highlights the evolution of the Eee PC species. $999 > ASUS > www.asus.com.au	**Kogan Agora Netbook** NEW Base version is almost component for component an MSI Wind; we recommend the Pro: larger (160GB) hard disk, more RAM and 6-cell battery (and is still cheaper). $549 > Kogan > kogan.com.au	**MSI Wind U120H** Same specs as the U100 but delivers on the ideal of the go-anywhere, permanently-connected device by including in-built 3G HSDPA. $999 > MSI > www.global.msi.com.tw
NOTEBOOK ALLROUNDER	**Dell Adamo** NEW Milled from a single razor-thin piece of aluminium, this is Dell's 16.5mm thick take on the MacBook Air fashion accessory. $3,699 > Dell > Dell.com.au	**Toshiba Satellite A300/0C3** NEW The Satellites are Toshiba's cost-effective all-rounders. The base model 0C3 starts with 2GB of RAM, 320GB HDD, 15in display, four USB ports and HDMI. $1,499 > Toshiba > Toshiba.com.au	**Toshiba Satellite U400** NEW Not terribly expensive, but one of the best balanced notebooks across performance, features and portability, not to mention price. $2,299 > Toshiba > Toshiba.com.au
DESKTOP REPLACEMENT	**ThinkPad W700ds** NEW Expensive, large and heavy, but the dual-screen capability, integrated graphic tablet and desktop-like specs mean it's a portable workstation. $7,500 > Lenovo > lenovo.com.au	**Acer Aspire Gemstone Blue 8920G** Incredible 18.4in, 1,920 x 1,080 HD display. There's a Blu-ray drive and 5.1 surround sound. This Core 2 Duo T8300 machine is a 4.1kg head-turning beast. $2,699 > Acer > www.acer.com.au	**HP X18** Top-of-the-line portable media centre. With an 18.4in, 1,920 x 1,080 screen, a Blu-ray player, a DVB-T/Analogue TV-tuner and great speakers. $3,899 > HP > www.hp.com.au
SMARTPHONE	**Samsung INNOV8** NEW The INNOV8 has more features than any other smartphone on the market, from all the HSDP and Wi-Fi, connectivity to an eight-megapixel camera and 16GB flash drive. $899 > Samsung > Samsung.com.au	**iPhone 3G** Try as we might to find a worthwhile alternative, the iPhone is the best all-rounder smartphone — glorious UI, 3G speed, more apps, and still great pose value. Plan > Apple > www.apple.com.au	**BlackBerry Bold** The Bold is the most addictive BlackBerry yet, with built-in Wi-Fi and GPS, a stunning screen and DivX/XviD playback. It's still the best for email too. Plan > RIM > www.blackberry.com
GPS	**Uniden TRAX 430 GPS** Comms company Uniden has released a ripper of a GPS device, impressing with its ease-of-use, exceptional screen and ability to create 3D maps. $379 > Uniden > www.uniden.com.au	**TomTom ONE XL** The most affordable TomTom that delivers the features that matter, with the same display and navigation engine of the more expensive TomToms. $399 > TomTom > www.tomtom.com	**TomTom GO 930** The top-of-the-line TomTom delivers traffic messaging, intelligent live routing, FM transmitter, voice-recognition and text-to-speech. $849 > TomTom > www.tomtom.com.au

	NOTEWORTHY	BEST VALUE	BEST PERFORMER
MEDIA PLAYER	**iPod Shuffle** NEW The 3rd-generation shuffle moves the playback controls into the earphones and has voice-over that tells you what song is playing. 4GB of storage carries up to 1,000 songs. $129 > Apple > apple.com.au	**Apple iPod nano** A new long narrow design and with an accelerometer that kicks the nano into landscape mode when you hold it sideways. Now in 8GB and 16GB models. $199 > Apple > www.apple.com.au	**Apple iPod Classic 80GB** The number-one selling MP3 player of all time — with the most intuitive menu system and super iTunes software that combines downloads and music management. $319 > Apple > www.apple.com.au
COMPACT CAMERAS	**Panasonic Lumix DMC-G1** A compact camera that looks and acts like a DSLR, with an interchangeable lens facility, but is as easy to use as a point-and-shoot. $1,649 > Panasonic > www.panasonic.com.au	**Nikon Coolpix S550** Good, cheap and easy to use with all the useful features of its more expensive competitors. $250 > Nikon > www.nikon.com.au	**Canon IXUS 80 IS** Probably the best digital compact on the market, with every function you could ever need but still at a great price. $379 > Canon > www.canon.com.au
DSLR CAMERAS	**Canon EOS 50D** Although better than the 450D, the 50D's price stops it being in the Best Value category. Still not as good as the Nikon D90 but still a great camera by any means. $2,599 > Canon > www.canon.com.au	**Canon EOS 450D** The best low-price DSLR you can get. Suited to the amateur photographer, the 450D offers heaps of features in a tiny DSLR frame. Bargain! $949 > Canon > www.canon.com.au	**Nikon D90** This is just sexy! The first DSLR with HD video, the D90 is the best non-professional camera you could get without sending yourself broke. $1,699 > Nikon > www.nikon.com.au
HD CAMCORDER	**Kogan DVC camcorder** While it's not in the Canon Full HD class, it's the only camcorder that delivers Full HD for anywhere near the price. Records in Mov format only. $369 > Kogan > www.kogan.com.au	**Canon HF11** An SD-card based camcorder with few moving parts, long battery life, and low weight. It records in AVCHD format, is easy to use and has excellent optics. $1,699 > Canon > www.canon.com.au	**Sony HDR-FX1000** The ultimate camcorder. Basically a pro camera without some broadcast features, it records full HD on HDV (Mini) tape delivering unparalled quality. $5,999 > Sony > www.sony.com.au
PHOTO FRAMES	**Kodak EASYSHARE W1020** A great 10in display, it comes with Wi-Fi access to connect you to Kodak FrameChannel's news, weather, sports and can receive pictures from Flickr or Kodak's online gallery. $285 > Kodak > www.kodak.com	**Kodak P720 Touch Digital** Kodak's entry-level Photo Frame, with a good quality 7in screen and the excellent Quick Touch Border which makes it really easy to navigate menus. $140 > Kodak > www.kodak.com	**Sony DPF-V900** The frame with the most stylish design and best picture quality and viewing angles that we've seen. Has several display modes and connection interfaces. $349 > Sony > www.sony.com.au
HDTV	**Kogan HD 32 1080P** A 32in 1080p HDTV with HD tuner selling for $899 whose quality is as good as anything in that size. HDTV doesn't get any better than 1080p. $749 > Kogan > www.kogan.com.au	**Sony Bravia W-series** One of the best LCD HDTVs: delivers great blacks, superb colour fidelity and great upscaling. $2,699 > Sony > www.sony.com.au	**Sony XBR series** A plasma killer — an LCD HDTV that cleverly uses LED backlighting in three different colours (RGB), to create the deepest blacks and strongest colours yet on an LCD. $6,399 > Sony > www.sony.com.au

	NOTEWORTHY	BEST VALUE	BEST PERFORMER
TV TUNER	**Silicon Dust HD Home Run** NEW A networked TV tuner server that allows any PC on your network to access digital television. Cheaper and easier than multiple antenna points. **$299 > Lako Pacific > hdhomerun.com.au**	**Kworld DVB-T 395UR** A basic HD tuner card that allows you to watch HD digital TV on your PC or notebook. It's not flash, but it works well, is portable and convenient. **$79 > Kworld > www.kworld.com.tw**	**Hauppauge WinTV PVR-350** With a 125-channel capable receiver, this PCI card pauses and replays shows, is able to schedule recordings and burn them to CD or DVD. Great quality. **$429 > Hauppage > www.hauppage.com**
DISC PLAYERS	**Sony PlayStation 3 80GB** Yes, it's a games console, but it also doubles as a Blu-ray player that's as good as any standalone devices on the market. It's the same price as some of the better ones, so do your sums. **$699 > Sony > www.sony.com.au**	**Kogan Blu-ray Player** Basic, affordable. Plays back good-quality HD and upscales DVDs. Downside is lack of support for BD-Live (Profile 2.0) which means no internet content or firmware upgrades. But at $249 who's complaining? **$249 > Kogan > www.kogan.com.au**	**Sony BDPS350** Superb HD playback quality and does great upscaling of DVDs to high definition. Unlike last month's $1,799 Pioneer, available for around $400 on the street. **$400 > Sony > Sony.com.au**
PVR	**Dvico TVIX 3330 Jukebox** Records SD & HD in 1080i with its in-built TV tuner, plays back video, JPEG slide shows and lets you transfer or stream via LAN. **$529 > Lako Vision > www.lakopacific.com**	**Wintal PVR2HD** If all you want is a PVR without an analogue tuner or smarts then this PVR is ideal — it's affordable, it does the job and comes with a big 320GB hard disk . **$499 > Wintal > www.wintal.com.au**	**Panasonic DMR-BW500** Can record two HD programs simultaneously to its 500GB hard disk or directly to Blu-ray media. Ethernet port. **$2,199 > Panasonic > Panasonic.com.au**
ROUTER	**D-Link DGL-4500** A dual-band gigabit router built for gamers. Helps prioritise game traffic, and now with Green technology, which detects link status and cable length and adjusts power usage accordingly. **$350 > D-Link > www.dlink.com.au**	**TP-Link TL WR941ND Wireless N** A Draft 2.0 N router with MIMO, using three adjustable antennas for speeds of up to 200Mbit/s. Performance is decent and the documentation is good. **$129 > TP-Link > www.anyware.com.au**	**Linksys Dual-N WRT610N** It does dual-band Wireless N (5GHz and 2.4GHz), is one of the best performers in testing and looks great. Comes with Linksys' superb LELA network setup wizard. **$290 > Linksys > linksys.com.au**
PRINTER HOME	**Epson Stylus Photo R290** If you want an inkjet that prints phenomenally good photos at 5,670 x 1,440dpi, the R290 should be at the top of your list.  **$1,099 > Epson > www.epson.com.au**	**Canon Selphy ES2** A dye sublimation printer, the Selphy can print directly from every variation of memory card and even from mobile phones, and you don't need a computer. **$299 > Canon > www.canon.com.au**	**Samsung CLP-300N** Faster, quieter, and the colour is good for most general printing. Samsung's affordable, network-ready CLP 3000N is perfect. **$349 > Samsung > www.samsung.com.au**
MFC	**Lexmark X4875** The X4875 is a nice-looking unit that loses nothing to higher-priced competition and looks good in its piano-white finish. **$199 > Lexmark > www.lexmark.com.au**	**Brother DCP-165C** A moderately priced inkjet all-in-one, that does most things well. It's fast for the price, prints and copies well, and it's not that big given it has an A4 scanner. **$129 > Brother > www.brother.com.au**	**Epson Stylus Photo TX800FW** This stylish MFC will look great in a home office — but it also produces good photos and good copying results. Can also be shared across a network. **$399 > Epson > www.epson.com.au**

THE RETRO GAMING REVOLUTION

Richard Cobbett fondly remembers the first time he saved the world. Do you? It's not too late to relive those highs, and you won't need an old 386 to do it.

Every gamer can think of at least one title that they never got round to playing, whether it was because the mere presence of the disc would have melted their underpowered PC, their pocket money didn't stretch that far at the time or there were simply not enough hours in the day. Unlike music and films, games have never had much of a shelf life.

They appear at full price, they reappear on a bargain table and then they're gone: lost in the mists of time. Well, almost. The internet provides the perfect opportunity to bring classic titles back, either commercially through online stores that don't need to worry about shelf space or via enthusiast projects. It's an opportunity that many are exploiting.

GOOD OLD GAMES

Two companies in particular are leading the way: Good Old Games (GOG) and Valve. The former runs **www.gog.com**, where you can pick up games for between US$6 and US$10. The latter is in charge of Steam (**www.steampowered.com**). Although the site mostly focuses on newer games, it also offers publishers the perfect chance to squeeze a little extra out of their back catalogues.

Ubisoft, Rockstar, EIDOS and Activision are just four of the major players who are involved. If you pirated Doom back in the day (and if you were around in the day, odds are good that you did), consider this the perfect time to atone.

Steam is good, but it's GOG that really impresses. Instead of simply selling games like any other product, it focuses on providing a good experience. Most of the games it offers have been floating around the pirate sites for years, begging the question of why you'd bother paying at all, but there's a simple answer to this query. Buying from GOG gets you the game, with all the hard work involved in getting it running already done for you (typically via a piece of software called DOSBox).

There's no DRM, no serial numbers and you can re-download a game as often as you like. In addition, each game comes with a number of extras ranging from simple avatars to full PDF manuals, wallpapers and complete soundtracks ready to be put onto your MP3 player and taken on the go. Not all the games on offer are classics (Waxworks, Simon the Sorcerer 3D and Messiah in particular could quite easily be dropkicked out of history without a single tear) but many are worth a second look. Freespace 2, Fallout, Jagged Alliance 2: these are classics by anyone's definition.

ROSE-TINTED GLASSES

Going back to a much-loved game can be a sobering experience. Time is rarely kind. We remember the highs of beating a game like X-Com (UFO: Enemy Unknown, to be more accurate) but rarely the clumsy interfaces or blocky graphics. The cut-off point tends to be

US$5

9/10

FREESPACE 2

From: **Good Old Games**

The sad truth is that after the release of Freespace 2, the entire space combat genre packed its bags and went home to a galaxy far, far away. On the plus side, it went out with a bang. It might be 10 years old, but Freespace 2 is the finest deep space shooter out there, with gloriously choreographed levels, gigantic ships and phenomenal mission design from start to finish. The only problem is that now that creator Volition has moved onto other games, notably Saint's Row, we're never likely to find out how the saga ends, leaving gamers on an cliff hanger that, irritatingly, may never be resolved.

BENEATH A STEEL SKY

From: **Good Old Games**

Featuring art by Dave Gibbons and adventure design from stalwart British developer Revolution, Beneath A Steel Sky is an adventure that many old-school adventurers count as a favourite. Revolution made it freely available a few years ago, and it runs perfectly under ScummVM. The Good Old Games version comes packaged with everything that you need to get going. It's a fun adventure that has a great slice of wit to it. Revolution moved on to create the excellent Broken Sword, but fans have rarely stopped clamouring for another trip down these dark (but not particularly mean) streets.

FREE

8/10

different depending on the genre. The more technologically advanced the game was in its day, the less likely it is to stand up nowadays. Sprite-based adventures like Monkey Island 2 and Sam and Max can still inspire those feelings of old because ultimately they were advanced enough to be able to use proper hand-drawn graphics, punchy music and play like pieces of art. An early 3D FPS, with characters nodding at each other (unable to move their lips as they 'talk') before stepping into a world of five monsters and guns that look more like bludgeoning devices than sleek futuristic weaponry. . . well, that's a different story altogether.

However, this sort of thing isn't necessarily a game-killer. Graphics aren't everything, and when you step into the archives, you know what you're getting into. Good games will usually win out. That's the theory, at least. In practice, it's easy to forget how far we've come in just a few short years. It's easy to think that real-time strategy gaming AI hasn't improved since Dune 2 until you go back and play Dune 2 in all its faded glory.

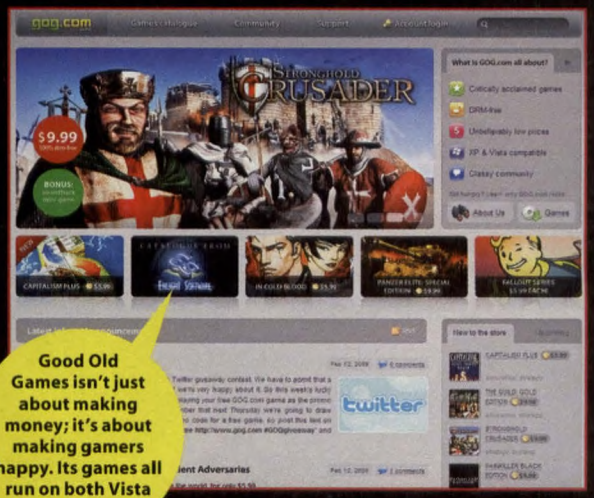
Likewise, the interfaces and control systems of even today's worst games are nothing short of revolutionary. Tastes change over time, and lessons are learned. No modern game worth mentioning is going to let you render it unwinnable by accident, while the classic adventures were so focused on player choice that they'd happily let you eat an important item only to reveal that you need it to complete the game several hours later.

Some games were nothing short of psychopathic in this regard. Take the first Space Quest game. At one point, you need to sell your character's hoverspeeder to a shifty gentleman on a Tatooine-style planet. If you sell it immediately, you can't win. If you refuse too many times, you can't win. Only by trial and bloody error are you going to find that if you refuse his first offer, he sweetens the deal by throwing in a jetpack: a jetpack that you need to get to the last area of the game. This isn't an

FACT FILE

Companies rarely remake old games, but it does occasionally happen. Sierra has produced VGA versions of the first episodes of several franchises, including Leisure Suit Larry and Quest for Glory. Ubisoft recreated the original Prince of Persia as a bonus when the series returned to our screens with the Sands of Time trilogy. By far the highest profile example is Tomb Raider: Anniversary, which is a remake of Lara Croft's original adventure with modern 3D and level design technology.

Many classic games suffer from interface problems, but in cases like X-Com, the game's quality still shines through.



Good Old Games isn't just about making money; it's about making gamers happy. Its games all run on both Vista and XP.

Tomb Raider: Anniversary is a rare case: it was remade using new technology for a modern audience.

It's safe to say that the original version of Grand Theft Auto didn't match the recent instalment's $100 million budget.

FACT FILE

The easiest way to find original copies of old games is to head onto eBay. Games don't hold their value particularly well, making it easy to pick up even relatively rare games cheaply. There are exceptions, but they tend to be the mint-condition original-box games, and their high prices are often slapped on more out of hope than expectation. Shop around and you can quickly build up a solid collection without breaking the bank.

exceptional case, either; this was standard in almost every non-LucasArts game at the time. Top of my personal hit list was Search For The King, where the only way to finish the game was (hours earlier) spontaneously kissed a gypsy fortune teller to make her teleport away in shock (probably to get a restraining order), followed by petting the lizard on her desk to receive a 'Resurrection Card' that saved you from being trampled to death in the final puzzle. So many years on, the anger still burns.

The advantage of all this is that when you do find a game that endures the test of time, it's that much better. In many cases, you're seeing a genre at its peak, either because a particular game was simply that good (Super Mario World remains the pinnacle of 2D side-scrolling platform games) or because the industry moved on. Doom still gives a cooperative gaming experience that's a lot of fun thanks to the industry moving towards deathmatch and team-based games instead of letting friends team up together against impossible odds.

ABANDONED ADVENTURES

Classic games often have an unusual place in gamers' hearts. Whether through age or simple nostalgia, they often mean more to many people than a new high-profile release. This makes 'abandonware' one of the most interesting online gaming trends.

Legally speaking, there's no particular difference between pirating a 10-year-old game and a 10-minute-old one, and the big sites dealing in older games stick to a surprisingly strict code when deciding what games they're willing to distribute.

The term abandonware applies to games that have been abandoned by their publishers and are therefore fair game. If a game is still sold, it doesn't count as abandonware, and respectable download sites will take it down. Likewise, the primary abandonware sites [such as Abandonia (**www.abandonia.com**) and the long-silent (but still usable) Home of the Underdogs (**www.the-underdogs.info**)] won't share

FREE

STAR CONTROL II

From: **http://sc2.sourceforge.net**

Star Control II is like no other game out there. It's space exploration, diplomacy, adventure and terrifyingly addictive space combat all rolled up into one, with every component a joy to play. The combat system is Spacewar on steroids, with every alien race you roll into during your growing resistance movement against the baddies bringing a totally different ship to send out into battle, while every conversation means fantastically written dialogue that can't help but bring a smile to your face. It's fairly easy to get trapped in unwinnable situations, but keep a guide handy and you'll have a great time.

JAGGED ALLIANCE 2

From: **Good Old Games / Steam**

Most games offer a very controlled experience. You get a job to do and a set of tools to do it with, then every major movement is scripted from that point on. Jagged Alliance 2 is a much more fluid affair. You have to retake an island from its psychopathic queen, but how you achieve this is up to you. Pick your mercenaries, tool them up and carve your own path to glory. Any game where you can send the villain a sarcastic bouquet of flowers demands to be played. Jagged Alliance 2 is a strategy game of such a high level that the only shame is that many strategy fans aren't even aware of its existence.

USS10

8/10

around copies of old LucasArts adventures because LucasArts has made it clear that it doesn't approve of them doing so.

This isn't an attitude shared by most pirate communities, with The Pirate Bay in particular jumping at the chance to mock anyone who tries to get in its way. The words 'retractable baton' have been used. (You can probably guess what the complainant was asked to do with it.)

In fairness to the games companies, there are reasons why they don't want to lose control over their old games. Should they ever go back to a franchise, being able to give away the original as a promotion makes for a good marketing technique. In other cases, a game being old doesn't mean that it can't still be sold. Bundle packs and the promise of services like Steam are all useless incentives if the game starts to be distributed for free. Tetris remains a licence to print money even after all these years, while icons like the classic Space Invaders still hold a place in our culture regardless of how much better modern games are.

Some companies (although sadly, not many) take a more laid-back approach and re-release their old games directly. Interestingly, it's mostly the British companies (and companies born from bedroom coders) that go out of their way to share the wealth. Rockstar Games will let you download both GTA 1 and 2 (the versions released before the game became 3D) as well as the lesser-known Wild Metal Country for free. Revolution released both Lure of the Temptress and Beneath A Steel Sky for download, and spent time working with the ScummVM team to make sure that its still commercially available Broken Sword games would be playable for the long haul. You've still got to go and buy the games in that case, but at least you can be confident that they will work without hours of painful struggle. As for ScummVM, it's a freeware application originally intended to let people play old LucasArts games on everything from PCs to mobile phones. It now supports everything from Simon the Sorcerer to The 7th Guest. If you can get hold of the original game (and in most cases, that's not too expensive if you use eBay or similar to track down sellers) you can get it working. This isn't the only such program out there, either: others include Exult (for Ultima VII), the Freespace Open Installer and DOSBox, which is used by both Steam and GOG to bring the classics that they sell back to life.

The beautiful thing about the retro gaming trend and the people who write the software that makes it possible is that no matter how fast technology zooms ahead, somebody is looking after the record of how it all began. There are lessons to be learnt from many of these games, and great experiences that deserve to stay alive. So we heartily recommend that you browse the back catalogues and relive the gaming highs of the last decade. There's never been a better time to fill in the gaps of your gaming career. apc

4X4 AUSTRALIA

LEAVE THE TARMAC, EXPLORE THE OUTBACK

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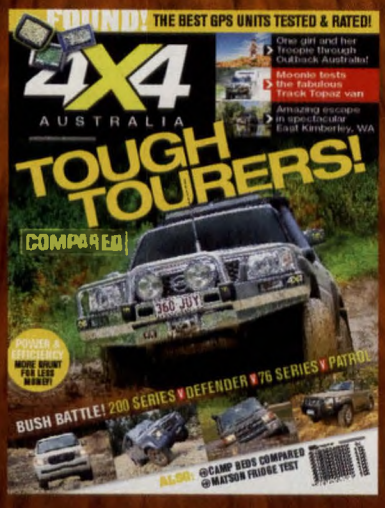
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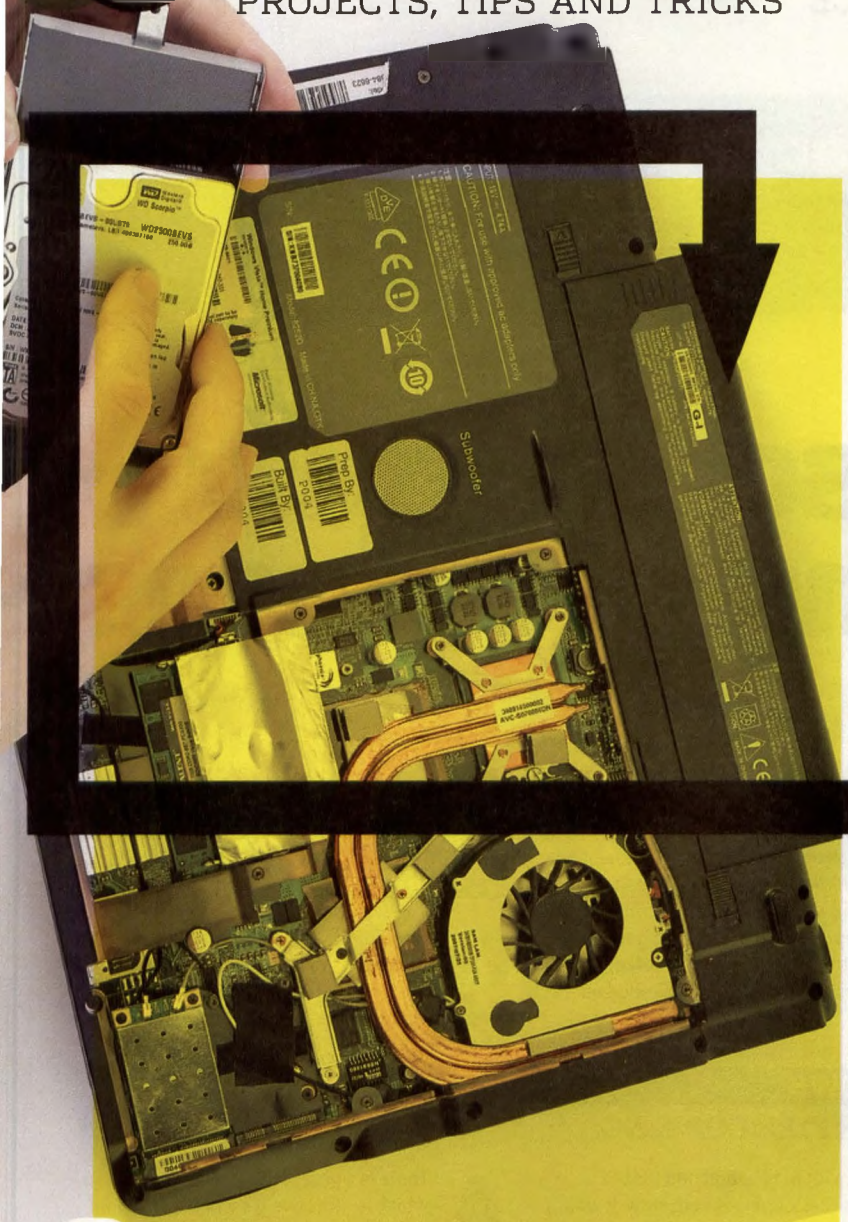
Moonie tests the fabulous Track Topaz van
Amazing escape in spectacular East Kimberley, WA
TOUGH TOURERS!
COMPARED
760 JDY
POWER & EFFICIENCY MORE OOMPH FOR LESS WANTS!
BUSH BATTLE! 200 SERIES V DEFENDER V 76 SERIES V PATROL
ALSO @CAMP BEDS COMPARED @MATSON FRIDGE TEST

71 howto

PROJECTS, TIPS AND TRICKS



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HOW TO POWER UP YOUR NOTEBOOK

Is your notebook computer starting to feel sluggish? We'll walk you through several DIY upgrades.

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WINDOWS

MATHS, NOT DATES IN EXCEL

Q I wonder if you can help me with something that I find hugely irritating in Excel 2003. If I type something like 11/2, or if I paste text which includes 11/2, Excel decides I want it to say 'Feb-11'. On the plus side, it's not so stupid as to believe I want 'Nov-2'. But I don't want either. If I type 11/2, I usually want 5.5. I never want it to say Feb-11. I don't want it to default to a date. It's a spreadsheet — shouldn't it assume maths, not two-thirds of a date?

John Clayton

A A general point to remember about using Excel is that it will only assume it must calculate any maths formulae if you expressly tell it to. One way to guarantee it will evaluate a formula is with an '=' sign preceding your data. If you enter the text A3-A2, it doesn't think you mean to subtract the value of cell A2 from A3, but instead assumes you mean a string. If you enter '=A3-A2' into a cell, it makes the correct calculation, and likewise '=11/2' will always evaluate a formula.

If you know which cells will have numerical formulas entered then one way to ensure they appear correctly is to select the cells in question, right-click on them and select 'Format Cells'. Then make sure you select 'number' and format the decimal places as you see fit. Excel will round any values to the number of decimal places you specify, so with your current example of '11/2', if you decide to select no decimal places, it will give you a rounded up answer of '6'.

WINDOWS

FASTER FILE COPYING

Q I copy a lot of files and find that Vista's file copying is very slow. It was supposedly fixed in Service Pack 1 but compared to XP it's still really slow on my machine. Is there any other way of speeding up file copying?

Jeremy Sands

A Actually there is. There are utilities that speed up file copying, such as the FastCopy or Teracopy, which use tricks such as dynamically adjusted buffers, no OS cache and asynchronous file transfer. FastCopy looks and feels more geeky but is highly regarded and tweakable. Teracopy is recommended for less-experienced users because of its friendlier UI.

MULTIMEDIA

WATCHING MOVIES ON YOUR IPOD OR IPHONE

Q It annoys me that I have to pay Apple for movies in its movie store that I already own. Is there any software that lets me convert my DVD movies to a format that I can play on my iPod or iPhone. Also, if I record TV shows with Media Center how can I get them onto my iPod?

Rowena Stack

A There is a great utility called Handbrake, which is effectively a video transcoder that accepts video from a number of DVD sources (VIDEO_TS folder, DVD image or real DVD, and some .VOB and .TS files) and converts it to iPod- or iPhone-friendly MP4 format. You need to rip the DVD first, using any of the many DVD ripping tools such as DVDdecrypter, CloneDVD or DVDsmith (see next item), although we obviously do not support ripping of copyrighted DVDs. Get Handbrake from **http://handbrake.fr**.

As for getting the shows you've recorded with Media Center, use iPodifier. It will take DVR-MS files from Windows Media Center and put them on your iPod. What makes iPodifier different to other video transcoders is that it not only converts the content so it can play on an

DVD Movie Backup Freeware: Copy Movie DVD to Computer
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SONY

iPod but automates the entire operation. Get it from **http://ipodifier.com**.

MULTIMEDIA

WATCHING MY MOVIES ON MY PC

Q I've got a new netbook and I'd like to watch some of my DVD movies on it, but it doesn't have a DVD drive. What's the easiest way to copy a full DVD movie that I own onto my netbook's drive? Please don't hit me with drivel about copyright. I have paid for the movie, I should be able to watch it on the platform of my choice.

Jeremy Fasulo

A As mentioned in the previous item, there are programs that allow you to copy or clone a DVD to your hard drive. Although we won't go on about copyright, any tips that we provide in Quick Tips always assume you own the DVD. Probably the simplest way to copy a full DVD is to use DVDSmith Movie Backup. This is DVD decrypting and copying software that copies an entire DVD movie to your hard disk and removes all the protections (CSS, RC, RCE, APS, UOPs and Sony ARccOS) while it copies. As the makers say, "you can make clones of your favourite DVD movies to your hard drive with just a few clicks — either complete with all the extras or just the main movie only, in selected audios and subtitles." In its Full Disk Mode, DVDSmith Movie Backup can copy the DVD movie to computer as a DVD folder or ISO file. Get it from **http://dvdsmith.com/**.

INTERNET

ONLINE CLIPPING SITES

Q I was horrified to learn that Google's Notebook, which I use on a daily basis to clip and store information from web sites, is no longer being developed. Apparently Google has abandoned it to concentrate on its Google documents. Can you recommend a replacement? I tried Zoho Notebook and it was woeful.

Karen Johnson

A There are various web clipping services. A recently popular one is ubernote (**ubernote.com**). It has a geeky, rough but quick feel to it. However, it can't handle long lists of tags elegantly. A better one in our opinion is Evernote. This can work both as a desktop application (with its own desktop client) or as a web-based one, which captures info with a browser plug-in. Of course, if you are into heavy-duty information clipping, nothing beats Microsoft's OneNote's speed, ability to clip anything, and categorisation abilities. Its downside, of course, is that it's desktop-bound and you can't access it from other computers as you can with a web-based service. Microsoft has actually released an online version, Thumbtack, a beta product from the Live family, which looks a lot like Evernote. Try as we might, we couldn't find where on Thumbtack's UI Microsoft had hidden the categories for tags.

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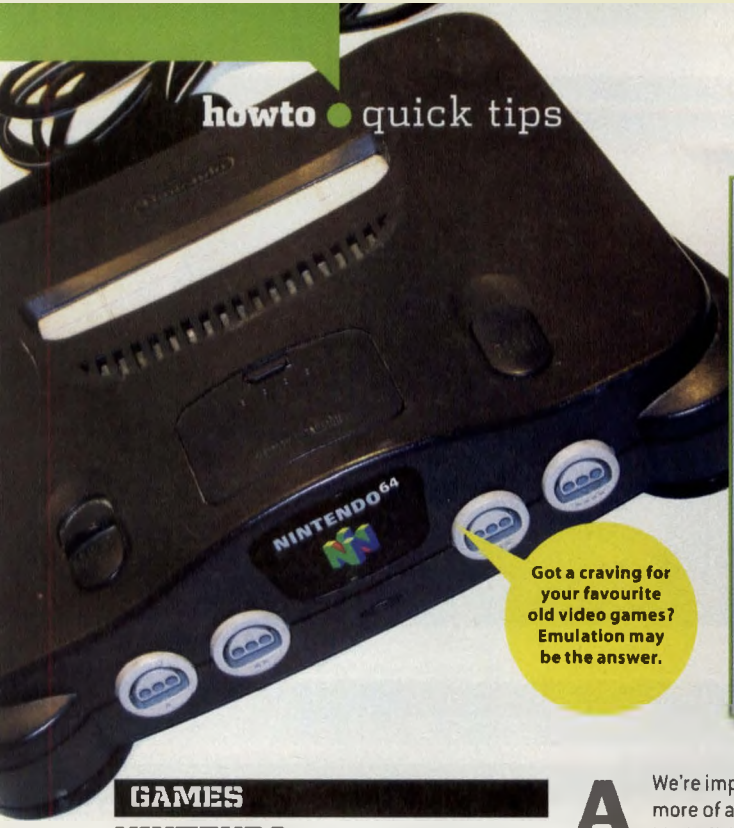
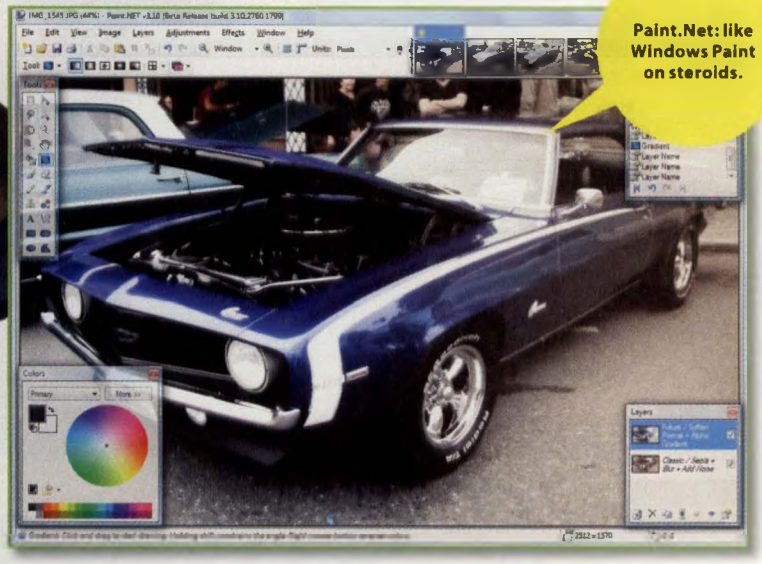


Got a craving for your favourite old video games? Emulation may be the answer.



Paint.Net: like Windows Paint on steroids.

GAMES

NINTENDO EMULATORS FOR PC

Q I miss some of the games I used to play as a kid on consoles like the Nintendo NES. Is there any way I can play them on my PC? Also, I would like to play games from my Nintendo 64 on my PC as well.

Lori Keats

A There are plenty of emulators on the web. For the NES, we recommend you download Nestopia, from **http://tinyurl.com/agbcfz** and for Nintendo 64, use Project64 at **http://pj64-emu.com**. You can also get an emulator for GameCube and Wii games at **http://tinyurl.com/avkynv**.

The issue here is that you need copies of the games on disk, which someone has dumped from the cartridges using a console emulator. We have no idea where you can get these, of course. An alternative is to head to online games emulators, like **www.playnes.net**, on which you can find many of your favourite NES games.

GRAPHICS

BEST PHOTOSHOP ALTERNATIVE

Q I can't afford Photoshop and have tried The Gimp but find The Gimp's idiotic Macintosh-style interface annoying and hard to work with. For instance, I have to crop photos to a set ratio and The Gimp just doesn't make it easy. I know there are heaps of crap Photoshop alternatives, but what do you recommend?

Walter Zhang

A We're impressed with Paint.Net. It's more of a "Microsoft" style product, a kind of Windows Paint on steroids, with a familiar interface. But best of all, it covers off the fundamentals nicely. If, as you say, you want to crop pictures to a set ratio, all you have to do is define the area to be cropped, go to the horizontal toolbar, click the Normal drop-down and select Fixed Ratio. That's it! Try doing the same in The Gimp.

HARDWARE

BEWARE OF WIRELESS INTRUSIONS

Q I have a laptop with Windows XP Home, a broadband connection and a wireless network that I like because it allows me to use my laptop around the house. A few weeks ago my connection became very slow, mainly in the evening. I have antivirus software and haven't seen any virus or spyware alerts. What's happened to my connection speed?

Freddy Carson

A Are you sure that you're alone on your network? If the DSL router is running with the default 'out of the box' configuration, the problem may be that a neighbour has detected your wireless network and is secretly borrowing your connection. You can find out if this is happening by examining your router's logs.

Use your web browser to connect to the router's home page, log in and look for LAN (Local Area Networking) configuration. Within this area look for the DHCP (Dynamic Host Configuration Protocol) log. This is a list of computers that are currently using your router to connect to the internet. You'll see a list of currently assigned IP numbers and next to those, a list of MAC (Media Access Control) addresses. These unique addresses are assigned to the card by the manufacturer and can't be changed. If you only have one laptop, you should only see one address. If there's more than one address, it means that a neighbour's laptop or other device has detected your network and has attached itself to it, enabling free network access at your expense. To remove your uninvited guest you must first identify which of the MAC addresses belongs to you.

To do this start a command shell on your PC by typing the command 'cmd' in the Run dialog box. At the end of the prompt execute the command 'ipconfig /all'. Your system will present you with several lines of networking information including your physical address. This is a 12-character address that will match one of the MAC addresses in the DHCP log page displayed by the router. If possible remove the unknown MAC addresses using the router options. Consult your router documentation for instructions on implementing WPA encryption and switching off your SSID 'beacon'. Also, remember to change your administrator username and passwords from the well known defaults. Monitoring software such as Airsnare (**http://tinyurl.com/3feau**) will alert you if any unknown devices attempt to attach themselves to your wireless network.

MULTIMEDIA

STREAMED BUT DOWNLOADED ANYWAY

Q What I find annoying about streaming video sites is that the video is still downloaded to your PC, you just lose it afterwards. Is there anything that automatically saves streamed videos to your PC?

Michael Petersen

Foxmarks has finally arrived on IE — great for those who use more than one PC.
foxmarks
Foxmarks is a free add-on for your browser that syncs and backs up your bookmarks across multiple computers and more.
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changes to your bookmarks and passwords across all your computers.
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to your bookmarks on our website.
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C/Net Editor's Choice Review
Laptop Magazine

A First, check out the software included on our cover disc this month, which is perfect for the task! Also notable is VideoCacheView from NirSoft, which captures streamed files stored in your browser's cache. It extracts the video file from the cache and saves it on your PC. It works by automatically scanning the caches of Internet Explorer and Firefox. If you have a movie player that can play Flash files (the kind found on You Tube), VideoCacheView allows you to play them directly from the cache. Also by NirSoft is a related application, called WebVideoCap — which actually captures flv files and RTSP/MMS streams from video sites. Get both from **tinyurl.com/3a4lmb**.

NETWORK

USERS LOGGING IN PAST IT'S FIREWALLS

Q How do programs such as GoToMyPC and LogMeIn work inside my network? My firewall blocks everything but essential traffic but my users can still reach their home PCs.

Faith Evans

A Console access across a network is easy to set up using applications such as Real VNC, RAdmin or eMando. Accessing a home desktop from work is another matter. At work your users are sitting behind a secure corporate firewall which — if it's working — is blocking the kind of traffic that remote desktop software sends to and receives from remote clients. On top of that, the home PC is sitting behind a router secured with some form of SPI (Stateful Packet Inspection) firewall and hopefully also behind Vista or XP's own Internet Firewall software. So only expected packets (solicited traffic) should be allowed through, not packets coming from an unexpected source. Clearly, what's needed is some way to bypass all these devices. GoToMyPC achieves this by masquerading as a normal http or secure http session, almost invisible to firewall logs and difficult to challenge.

To connect to the home PC a user needs to download a thin Java client from the GoToMyPC web site. The client then attempts to communicate with gotomypc.com through ports 80, 443 or 8200, connecting on 443 if possible, as to firewall logs this looks like an ordinary connection to a secure web site. GoToMyPC servers then route the connection to a server host on the target PC.

This kind of anonymous session can be a problem for administrators attempting to keep track of documents leaving the company or trying to direct the daytime activities of the workforce, because the secure SSL session can't be analysed. Firewall administrators should block all access to network 66.151.158.0/24 (GoToMyPC IP range) and should contact gotomypc.com and ask to have connections from public address ranges blocked. Desktop administrators should restrict the users' ability to download and install software, particularly blocking the following files: g2comm.exe, g2fileh.exe, g2host.exe, g2mainh.exe, g2pre.exe, g2printh.exe, G2ProcessFactory.exe, g2svc.exe, g2tray.exe.

OFFICE

AVOIDING OVERPRINTING IN EXCEL

Q I print out a lot of Excel spreadsheets and one of the frustrating things is how Excel inevitably prints heaps of unnecessary pages. Is there an intelligent alternative to this waste of paper?

Paul Somerville

A It's all about your page breaks. Excel inserts them automatically, but if you learn to do it manually, you can adjust them and get better printouts as well as save paper. Excel provides a Page Break Preview mode that appears as a dashed line on the sheet and which allows you to see how other formatting changes affect the sheet. To use the Page Break Preview mode, go to 'View > Workbook Views group > Page Break Preview'. Insert a vertical page break by selecting the row

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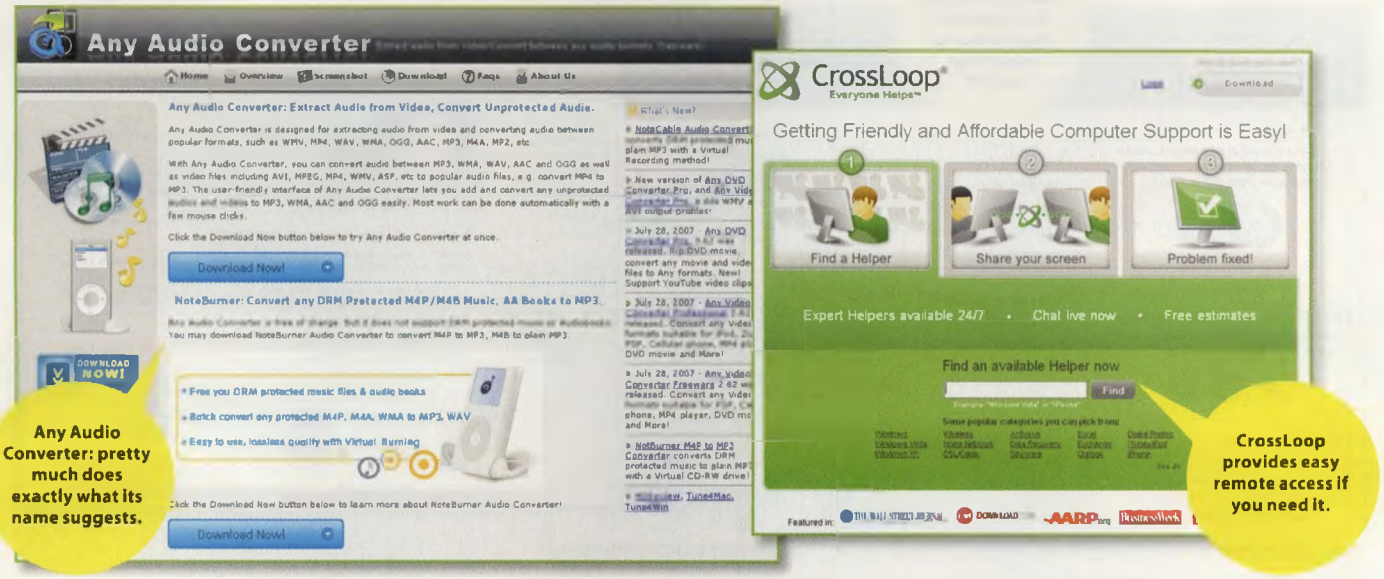
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CrossLoop provides easy remote access if you need it.

below where you want the page break. Insert a horizontal page break by selecting the column to the right. To move a page break, ensure Excel's cell drag-and-drop feature is enabled, click the worksheet you want to print, and on the 'View' tab in the 'Workbook Views group' click 'Page Break Preview'. Drag the page break to a new location.

INTERNET

FOXMARKS NOW FOR IE

Foxmarks, the indispensable browser bookmarks synchronisation tool for Firefox is now finally available for Internet Explorer. For IE users it's a momentous occasion. Foxmarks was one of the plug-ins that has made Firefox the browser of choice for many tech-savvy users. Add it to any instance of the Firefox browser and it will log into your online account and synchronise your bookmarks with it.

Foxmarks is a must if you use multiple computers, but we've always been astonished that the browser with the largest market share, IE, didn't have something so elegant. Now, finally, Foxmarks has a version for IE, which can synchronise bookmarks across Firefox and IE as well. The holy grail of bookmarks — having the same bookmarks on whatever computer or browser you use — has virtually been found.

NETWORKING

EASY REMOTE ACCESS

Q As your typical *APC* reader, I guess, I am constantly asked by my friends and acquaintances to help with their PC problems. I don't mind, but often I have to go to them. There are all sorts of ways that I could tap into their computers to see what's going on, but most require a bit of fiddling from their end. Is there anything that makes it much simpler?

James Castle

A We hear your problem James. Have you heard of a program called CrossLoop? Get your customer to download it, execute it, and send you the code it generates. Fire up yours, input the code, and you're at their machine. Dead simple, it works, and should save you a few trips.

WINDOWS

CONTACTS OUTSIDE YOUR ADDRESS BOOK

Q I've used Outlook for a while and have a handy list of names and emails that appear whenever I start to type an email address. However, I've noticed that most of these names aren't in my Contacts folder. Is there another address book that I haven't set up that these names are in?

John Weela

A Outlook automatically adds a new entry to this AutoComplete list each time you respond to an email and is clever enough to recognise when an entry already exists. So this handy list of names can become as vital as your Contacts. On the other hand, an incorrect entry in this list can send your email in the wrong direction.

The list of names is stored as a nickname file (.NK2) in the default location; C:\Documents and Settings\your name\Application Data\Microsoft\Outlook. This isn't a searchable database; the NK2 file is simply a block of data interpreted by Outlook on starting. However, you may add names from the AutoComplete entry to your Outlook Contacts if you right-click on the name when creating a new email. Incorrect entries can be removed simply by using the delete key when any item on the AutoComplete list is selected.

AUDIO

ANY AUDIO CONVERTER

How many times have you downloaded a music or video clip and wanted to keep just the sound? Any Audio Converter is a free sound extraction utility that rips sound from any video file — and also converts it between popular formats, such as WMV, MP4, WAV, WMA, OGG, AAC, MP3, M4A, MP2, and more. The only thing it does not do is extract sound from DRM-protected files or Audiobooks. But that's because it's free. A related product, NoteBurner Audio Converter, can. It can convert any DRM Protected M4P/M4B music, AA Books to MP3. Get either from **http://any-audio-converter.com**.

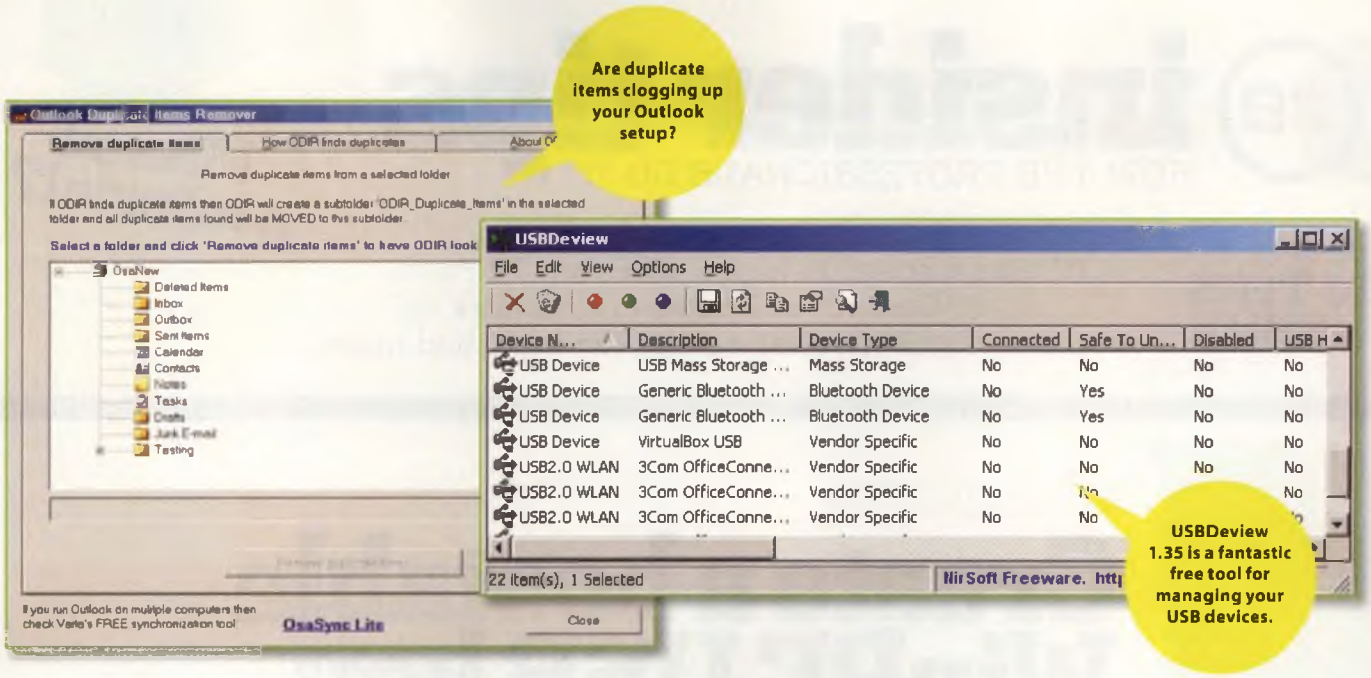
VISTA

STOP VISTA HIBERNATING

Q In XP I used to hit the shutdown button, and Windows would log off, write some data to the disk, then shut down correctly. I have now found that the same button in Vista puts the computer into a hibernation state, and on my PC at least, this takes a while, and I want the machine in a fresh state when I turn it back on. How can I prevent this from happening?

Alfred Cheung

A The automatic hibernation is a love it or hate it part of Vista, but you can get rid of it easily if you want to. When the PC


Are duplicate items clogging up your Outlook setup?
Remove duplicate items
How ODIR finds duplicates
Remove duplicate items from a selected folder
Select a folder and click 'Remove duplicate items' to have ODIR look
OssNew
Deleted Items
Inbox
Outbox
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If you run Outlook on multiple computers then check Vaita's FREE synchronization tool
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Device N... Description Device Type Connected Safe To Un... Disabled USB H
USB Device USB Mass Storage ... Mass Storage No No No No
USB Device Generic Bluetooth ... Bluetooth Device No Yes No No
USB Device Generic Bluetooth ... Bluetooth Device No Yes No No
USB Device VirtualBox USB Vendor Specific No No No No
USB2.0 WLAN 3Com OfficeConne... Vendor Specific No No No No
USB2.0 WLAN 3Com OfficeConne... Vendor Specific No No No
USB2.0 WLAN 3Com OfficeConne... Vendor Specific No No
22 item(s), 1 Selected
NirSoft Freeware. http
USBDeview 1.35 is a fantastic free tool for managing your USB devices.

hibernates, it copies the contents of the system memory to disk, then when you boot up the PC, it simply fills system memory with the contents of this file. This process must be disabled properly and there's no quick menu option to do this.

You first need to open a command prompt as an administrator. This means creating a shortcut on the desktop, right-clicking it and choosing 'Run as Administrator'. Type 'powercfg.exe /hibernate off' at the command prompt. This fully disables hibernating and the feature will only be available again via the same process (but typing 'powercfg.exe /hibernate on').

OFFICE

REMOVING DUPLICATES

Q Is there a quick way of removing duplicates from Outlook? I recently merged contacts from a couple of address files and I have literally thousands of duplicates. And while I am at it, what's the quickest way of removing duplicates from an Excel column?

Louise Mack

A For Outlook, try a free program called ODIR (for Outlook Duplicate Items Remover) at **vaita.com/ODIR.asp**. It removes duplicates from all of Outlook's main components, from email to contacts. For Excel, duplication removal is there in the program itself. Define the column with the duplicates. Go to 'Data > Data Tools group > Remove Duplicates'.

USB TIP

MANAGE USB DEVICES

If you have lots of USB devices, USBDeview v1.35 is a fantastic free tool for managing them. It lists all USB devices connected to your computer, and USB devices that you previously used. USBDeview provides much more information than Windows, such as device name/description, device type, serial number (for mass storage devices), the date and time that device was added, VendorID, ProductID, and more.

Best of all, it allows you to easily disconnect USB devices with one click. Get it from **tinyurl.com/yot7pc**. Its maker, Nirsoft, also makes similar utilities for monitoring Bluetooth devices, wireless networks, network adapters and loaded Windows drivers.

WINDOWS

STANDARD DIMENSIONS

If you find yourself inserting the same format of table in Microsoft Word you can set the default dimensions to whatever you like. The default table size is two columns with five rows. When you click on the 'Create Table' icon it will insert a blank table with those dimensions. You may, however, find yourself creating tables of the same size often and wish to change the default number of rows and columns.

You can set the defaults a single time by selecting 'Table > Insert > Table', keying the number of columns and rows and putting a checkmark in the box labelled 'Remember dimensions for new tables' near the bottom of the dialog. After this, the tables icon will create any new table with those dimensions.

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IN THIS ISSUE

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WINDOWS VIEW

Create a bootable WinPE USB key

Windows Preinstallation Environment is widely used by admins and OEMs to deploy Windows. You can use it too.

APC EXPERT

JAMES BANNAN

James Bannan is a systems manager at St Leonard's College (Vic) and *APC*'s resident Windows expert.

Microsoft developed WinPE to replace MS-DOS as an installation environment. It's a fast and flexible operating interface that gives admins lots of options when deploying image builds, running diagnostics or recovering data.

WinPE is built on the Windows kernel, so it supports the latest hardware platforms and can run a wide range of utilities. Since Windows Vista (WinPE 2.0), it's also free. The benefit for users is that it offers a basic environment for troubleshooting a crashed system, accessing drives and recovering data. It's also insanely customisable using freely-available tools and boots from just about any media.

To create a bootable WinPE USB key, you'll need the Windows Automated Installation Kit (WAIK), which is a free download from Microsoft, and a USB key with at least 1GB free. The key will be formatted, so back up any data from it.

Download and install the WAIK, then go to 'Start > Programs > Microsoft Windows AIK' and select 'Windows PE Tools Command Prompt'. This opens up a command window with various WinPE tools loaded and ready for use. Then, type:

```
copype.cmd x86 c:\x86pe
```

This copies the necessary files for the x86 platform to a new folder called 'x86pe' on the root of C:. If you want to create a 64-bit version, substitute 'x86' for 'AMD64'. The new folder contains all the files necessary to customise WinPE and create a bootable ISO. You may need to add some drivers to support a particular platform; you can do this by mounting the winpe.wim file and injecting files straight in. To do so, type:

```
imagex /mountrw c:\x86pe\winpe.wim 1 c:\x86pe\mount
```

Change to the 'mount' folder and look at the contents — it's the same structure as on a normal install of Windows. Next, download the latest Vista drivers for the hardware you want to support. WinPE doesn't support app installers, so don't download driver packages that need to be installed. Most vendors will provide drivers in a ZIP file or executable that can be extracted with a utility like WinRAR. Either way, you need to be able to access the relevant INF driver files. To inject the drivers, type in the following command:

```
peimg /inf=DRIVERLOCATION /image=c:\x86pe\mount
```

DRIVERLOCATION is the physical path to the INF file (eg. c:\driver\nic.inf). If you want to inject multiple drivers from the same location you can use wildcards (eg: c:\driver*.inf). Commit the changes by typing:

```
imagex /unmount /commit c:\x86pe\mount
```

This closes the mounted WIM file and saves all the changes. You now need to create a bootable ISO that can then be transferred to the USB key. To create the ISO type in:

```
oscdimg –bc:\x86pe\etfsboot.com –n –o c:\x86pe\iso c:\
x86pe\x86pe.iso
```

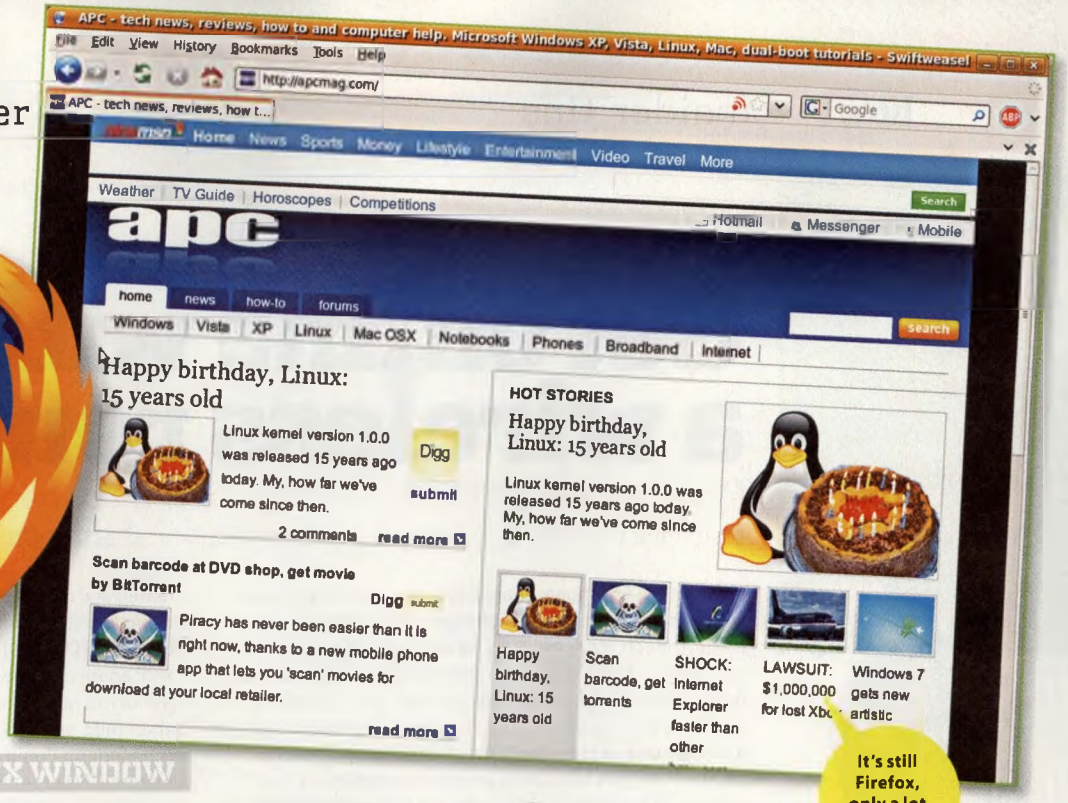
This reads the x86pe folder structure and creates a bootable ISO called x86pe.iso, which you can burn to CD using a utility like InfraRecorder or mount in a virtual drive using Daemon Tools. To transfer the ISO to the USB key, attach the key (make sure the computer can read it) and ensure that the WinPE ISO is accessible. Then open a command prompt, type in DISKPART and then enter the following commands:

- LIST DISK
- SELECT DISK 1 (assuming the USB device is DISK 1)
- CLEAN
- CREATE PARTITION PRIMARY
- SELECT PARTITION 1
- ACTIVE
- FORMAT FS=FAT32
- ASSIGN
- EXIT

This prepares the key. Now type in:

```
xcopy d:\*.* /s/e/f e:\ (this assumes the ISO is d:\ and the
USB drive is e:\).
```

And that's it. WinPE is now loaded onto the key, which is bootable, and you have your own portable OS.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Happy birthday, Linux: 15 years old
Linux kernel version 1.0.0 was released 15 years ago today. My, how far we've come since then.
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Digg submit
Piracy has never been easier than it is right now, thanks to a new mobile phone app that lets you 'scan' movies for download at your local retailer.
read more
HOT STORIES
Happy birthday, Linux: 15 years old
Linux kernel version 1.0.0 was released 15 years ago today. My, how far we've come since then.
Happy birthday, Linux: 15 years old
Scan barcode, get torrents
SHOCK: Internet Explorer faster than other
LAWSUIT: $1,000,000 for lost Xb
Windows 7 gets new artistic
It's still Firefox, only a lot faster!

LINUX WINDOW

Faster Firefox

If you're willing to experiment a little, you might find a pleasantly faster browsing experience.

APC EXPERT

ASHTON MILLS

Editor of the Linux Pocketbooks series, and now with CHOICE magazine, Ashton has been a tech journo for over 13 years, including five years with *APC*.

There are a lot of browsers out there. Some are platform-specific while others cross multiple platforms; some are restrictive while others are freely open; and some use different technologies to get the same job done. And then there are the derivatives of these — sometimes only as small as a branding change, or as large to become a new browser in their own right. Like Arora (**code.google.com/p/arora**), a WebKit (the rendering engine used by Apple's Safari) based browser built with QT4, and offering a fast WebKit alternative to the Gecko and GTK-based Firefox for the KDE desktop. And then there's the derivatives that don't try and re-invent the wheel, but they do try to make it turn faster — such as Swiftweasel.

If you like browsing (and let's face it, who doesn't?) then it's well worth checking out as an alternative to Firefox on your desktop. Why would you want a 'faster' browser anyway? Afterall, what has browsing to do with speed? Especially when, for the most part, the speed of any browser is a function of its connection to the internet — unless you can grab that data faster, it's not going to make much of a difference, right? And, yes, this is true — except after you use a browser like Swiftweasel you also see that, actually, rendering performance can make a difference to your experience too. So much so, in fact, that you find it hard to go back to slow-old Firefox afterwards.

So what sets Swiftweasel apart? The core speed increase comes from having different versions optimised for different CPU architectures — both AMD and Intel processors — and in 32-bit and 64-bit varieties. You grab the version for your CPU architecture, and you've got a browser optimised to run on it. It's also compiled with PGO, aka. Profile Guided Optimisation, a technique for increasing the performance of applications by actually running them, compiling usage statistics, and then re-compiling the program based on these statistics. Between the optimisation for CPU architectures and PGO, the result is a noticeably snappier browser.

To complement this, Swiftweasel also slightly tweaks Firefox's default networking settings (viewable by entering 'about:config' in the URL bar) by enabling pipelining by default and slightly increasing the maximum simultaneous connections, which will speed up fetching data in some circumstances. These are some classic networking tweaks for Firefox, but they have been implemented with moderation, which is good, as overdoing them can have a negative impact too. Finally, it bundles a few plug-ins by default, including AdBlock Plus, which not only serves to block annoying ads and pop-ups, but in doing speeds up the browsing experience as well.

All together the result is a Firefox browser that is more responsive and renders pages faster than the default Firefox binaries you'll get with your distribution. It's an unexpected but interesting application of optimised compiling, as usually this is reserved for CPU-intensive programs (like rendering applications, or compression and encryption). But funnily enough, it does make a difference to the responsiveness of the browser and — if you think about it — since you spend so much time in front of it, you might as well make it as pleasing an experience as possible.

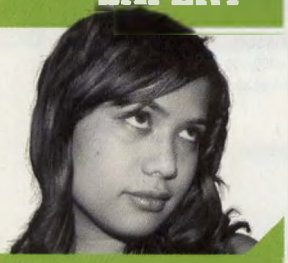
Now, after using it a while, I'm on the lookout for an equivalent under Windows. At least with the open source nature of Firefox this is possible; the same could not be said for IE, for which only Microsoft are the keepers of the code, and any compiler optimisations there will still need to be for the lowest common denominator of hardware support. If you feel like a swifter change, head to **swiftweasel.tuxfamily.org** and, in the download section, grab either standard binaries or packages for the various versions of Ubuntu.

IPHONE

Get online without a wireless router

Want to use your home's high-speed connection on your iPhone but don't have a wireless network? **Jenneth Orantia** shows how.

APC EXPERT



JENNETH ORANTIA

An expert on all things mobile, Jenneth Orantia has been writing reviews and tutorials on smartphones for the last seven years. Her current phone of choice is the iPhone 3G, but she's also well-versed in Windows Mobile, Symbian, Palm and BlackBerry.

TIP...

Setting up an ad-hoc network is a good way to use your home internet connection on your iPhone without having to set up a full wireless network, but what about when you're out and about and want to use your iPhone's 3G connection on your laptop? Apple hasn't reversed its position on modem-tethering applications yet, so you'll have to jailbreak your iPhone and use one of the Cydia third-party programs to turn your iPhone into a wireless hotspot, such as iPhone Modem or PDANet.

If you've got an iPhone, chances are you've also got a plan with generous data allowance to go with it. While you're at home, though, it seems like a waste to use that quota when you've got a home broadband connection to tap into. The obvious next step would be to upgrade your network to wireless, but if you'd only use it on your iPhone sparingly (or if the network in question is at your parent's, friend's or partner's house) then you'd probably be better off just setting up a wireless ad-hoc network between your iPhone and a computer that's hard-wired to the network.

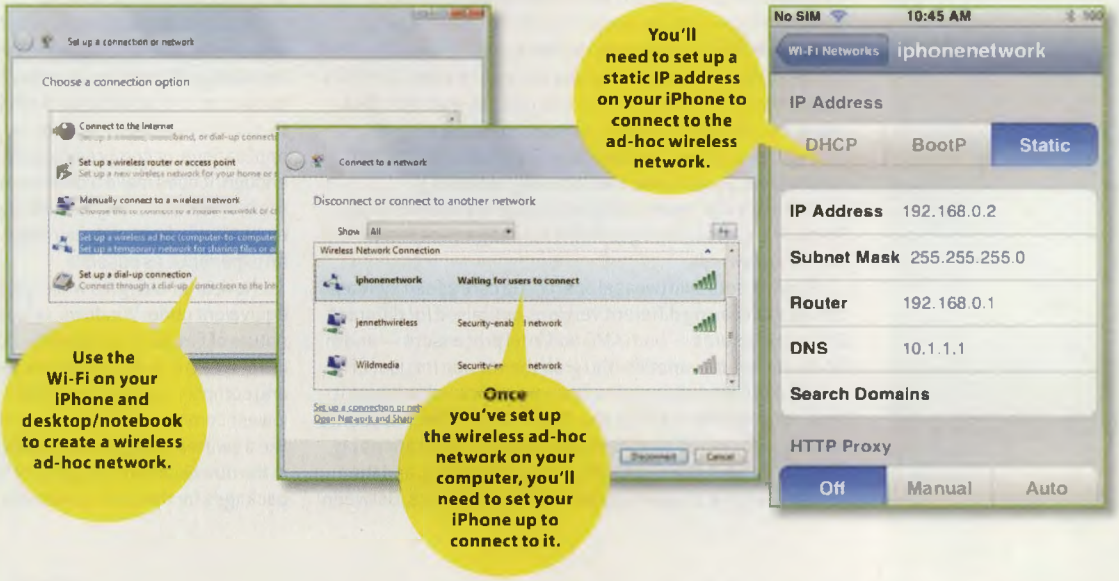
You may not need a wireless network to set the connection up, but you will need a PC with Wi-Fi. If you've got a desktop computer, it's unlikely to have built-in Wi-Fi, in which case you can buy an 802.11b/g USB adapter for around $25. Turn your computer's Wi-Fi on, then go to 'Start > Control Panel > Network and Sharing Center' and click 'Set up a connection or network' on the left-hand side. Select the 'Set up a wireless ad hoc (computer-to-computer) network' and click Next twice. Give the network a name, change the security type to WEP and enter a security key that you'll remember. Check the 'Save this network' box and hit Next.

The final screen in the wizard will tell you that the network is ready to use. Click the 'Turn on Internet connection sharing' box, press 'Continue' in the User Account Control dialog box and you'll see a box saying 'Internet connection sharing is enabled.' Click 'Close'.

You should now be back at the Network and Sharing Center window. Click 'Manage wireless networks' on the left-hand side. Highlight the name of the network you just created and click 'Adapter properties'. Click 'Continue' on the User Account Control' box. Highlight 'Internet Protocol Version 4 (TCP/IPv4)' and click 'Properties'. Make a note of the IP address and subnet mask listed there: you'll need to refer to this later. If there's nothing in the Preferred DNS server field, open up a command line (Start > All Programs > Accessories > Command Prompt) and type in 'ipconfig /all'. Under the 'Ethernet adapter Local Area Connection' heading, there'll be an entry for DHCP server. Use those numbers for the Preferred DNS server field.

Now it's time to set up the connection on your iPhone. Go to the Settings on your iPhone, click on Wi-Fi and make sure Wi-Fi is set to On. You'll see the name of your new wireless network in the list. Click on the blue arrow on the right-hand side of it and then click the Static button. For the IP address, add one to the last number of the IP address of your computer that you noted down earlier. If your PC's IP address was 192.168.0.1, for instance, enter 192.168.0.2 on your iPhone. Insert the same subnet mask that your PC had, and under router, insert your PC's IP address (192.168.0.1, for the example used earlier). Under DNS, use the same one you entered for the PC under the 'Preferred DNS Server' field.

Click the Wi-Fi Networks arrow at the top, then highlight the name of your new wireless network. Enter the password that you set previously. On your PC, a Set Network Location window should appear. Click Home, press 'Continue on the User Account Control' box, and click Close on the 'Successfully set network settings' screen. You should now have full wireless internet access on your iPhone. APC


Use the Wi-Fi on your iPhone and desktop/notebook to create a wireless ad-hoc network.
Once you've set up the wireless ad-hoc network on your computer, you'll need to set your iPhone up to connect to it.
You'll need to set up a static IP address on your iPhone to connect to the ad-hoc wireless network.
Choose a connection option
Disconnect or connect to another network
Wireless Network Connection
iphonenetwork
Waiting for users to connect
No SIM
10:45 AM
Wi-Fi Networks
iphonenetwork
IP Address
DHCP
BootP
Static
IP Address 192.168.0.2
Subnet Mask 255.255.255.0
Router 192.168.0.1
DNS 10.1.1.1
Search Domains
HTTP Proxy
Off
Manual
Auto

SOFTWARE

The right codec

You've edited the video and are faced with a seemingly infinite number of encoding options. These are the best formats.

APC EXPERT

GOUGH LUI

Gough Lui is a university student, currently studying electrical engineering. He has worked with computers as a hobbyist since he was young, many times repairing, salvaging, building and servicing his own systems.

First up, if you haven't got any codecs yet, I would recommend you download the K-Lite Mega Codec Pack (***http://free-codecs.com***). Select a configuration or tick whichever codecs you might be interested in and install. Another tool I would recommend is MediaCoder (***http://mediacoder.sourceforge.net***) which allows you to transcode video between formats.

YOUTUBE, DIVX-COMPATIBLE PLAYERS, HIGH-QUALITY, SMALLEST SIZE

Most online video services accept a variety of formats. Encoding with DivX or XviD for video with MP3 CBR audio in an AVI container seems to be very compatible with these services. Bitrates and resolution are your choice, however, there is no need for overkill (above 1,500Kbit/s for video or above 192Kbit/s for audio) as the final result will usually be re-encoded to something much less.

DVDs, HIGH-QUALITY ARCHIVAL

For a DVD, there is no choice in codec. It's best you author a DVD from start to finish in a package that exports directly into DVD format. However, if you can't, you can always encode your production as 720 x 576 25fps MPEG-2 with MPEG Layer 2 Audio at 48kHz and get away with it, as it won't need to be re-encoded. Keep your video bitrate below 8Mbit/s and audio bitrate below 320Kbit/s. LPCM and Dolby Digital are other options for audio but are seldom available.

MAXIMUM COMPATIBILITY

There are times where you don't know what sort of computer you're going to meet and you just want to ensure the video plays. I usually stick to MPEG-1 with MPEG-1 Layer 2 Audio, resolution of 352 x 288 at 25fps with a bitrate of no more than 1,600Kbit/s for video and 256Kbit/s for audio. This setting is very similar to VCD and most modern DVD players will play these files off disc through a file-browser interface without trouble. It is very compatible as, since Windows 95, a codec for MPEG-1 has been included as standard; likewise, Quicktime on Macs has supported it for quite some time. This is a very mature standard.

MULTI-STREAM, SUBTITLED

If you are dealing with multiple streams or subtitles, it would be advisable to take a look into the Matroska (.mkv) container, which allows you to collect streams of most codecs and multiplex them together into a multi-stream file. MPEG-4 (.mp4) allows this to a certain extent as well, but be aware of limitations with the container type.

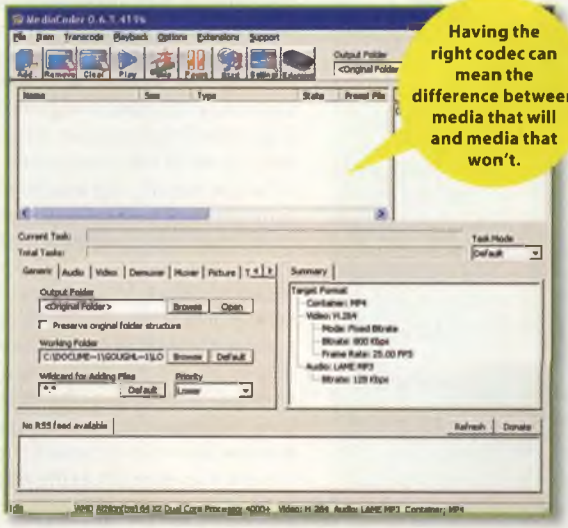
iPOD

For iPod, your videos must be coded to the MP4 container. ASP (H.263) is supported at a resolution of up to 480 x 480 at bitrates up to 800Kbit/s. Audio is MPEG-4 with Low Complexity and High Efficiency profiles supported. AVC (H.264) is supported at a lower resolution of 320 x 240 at bitrates up to 600Kbit/s. Multiple passes can be used to increase quality.

STREAMING

When I encode for streaming, I usually choose between Quicktime and Real formats, as they are supported well on both PC and Mac. Windows Media is not as compatible on the Mac. Code a variety of bandwidth streams to suit the target audience if streaming from a live server, or code discrete files at a few appropriate rates if serving from a standard server.

Go to *http://free-codecs.com* and get your hands on the K-Lite Mega Codec Pack to get started.



Having the right codec can mean the difference between media that will and media that won't.

APC EXPERT

SIMON BISSON

Simon is a Microsoft applications expert and veteran IT journalist.

LINUX WI-FI

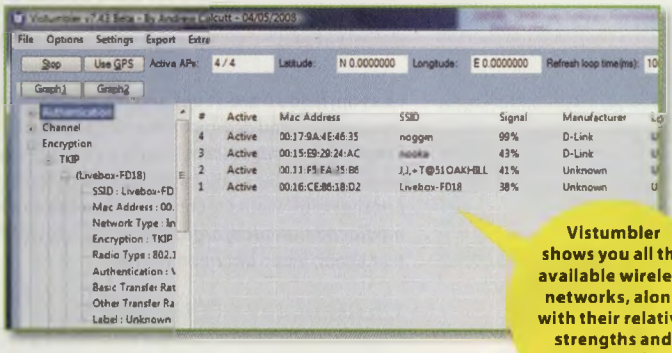
Wireless connection tips

Get Linux to connect wirelessly — and find a cleaner spectrum at home.

Windows and Mac OS X come with plenty of tools for working wirelessly. Things aren't so easy for Linux, however. HP is one of the sponsors of the Wireless Tools for Linux initiative (**tinyurl.com/ywoou**), which builds on the work done on the Linux Wireless Extension. The Wireless Extension is an API that gives different wireless LANs a common way of communicating with desktop tools and utilities.

The Wireless Tools are designed to work with this and give applications a way of controlling wireless cards and wireless network connections. The current version, 29, adds tools for working with WPA connections, as well as making it easier to scan for a network. There's a changelog on the web site, showing how you can use it on your Linux laptop.

Meanwhile, if your Wi-Fi spectrum (both at home and in the office) is becoming crowded due to many access points, you may start experiencing interference. It's quite easy to optimise your Wi-Fi connection. You could buy a bigger antenna and drown out the signals from the other devices, or you could switch the channel your wireless system is using. Tools such as Network Stumbler (**www.netstumbler.com**) or the more recent Vistumbler (**www.vistumbler.net**) scan the local wireless space and show which channels are in use.



Vistumbler shows you all the available wireless networks, along with their relative strengths and channel numbers.

To improve your Wi-Fi performance, simply switch to a channel your neighbours are not using. If all the channels are in use, you'll suffer less interference if you use the channel that currently shows the lowest signal strength rating.

APC EXPERT

PETER DOCKRILL

Peter Dockrill is APC's DVD Editor. He also edits the Chip Chat column, in addition to writing occasional reviews and sub-editing the magazine. He formerly edited APC's Watchdog section, and he contributes as a technology writer to Money Magazine.

VIDEO CONVERSION

How to convert Flash videos

Our cover disc software, FLV to Video Converter Pro 2, enables you to convert Flash video into numerous formats.

The explosion in Flash video in the past five years has been phenomenal. With increasingly fast internet access at our disposal, users are being bombarded with video content on the web — and some of it is pretty top-notch, worth-keeping stuff. So what can you do if you see a web video (for example, at YouTube, or any site that hosts and plays back Flash video) that you want to keep or watch elsewhere? Well, it's not all that complicated. On this month's cover disc, we've got two full programs from Moyea that will enable you to rip the video from the web site it's on and then convert it for playback into one of several formats (eg. for your iPod or mobile phone etc.) First, grab the APC DVD and install both Moyea YouTube FLV Downloader 2 and Moyea FLV to Video Converter Pro 2 on your PC. (Note: the latter is a full, commercial program, but to use it, you must activate it by July 31 2009 — see the instructions on the disc.) Now, once you've found an online video that you want to keep, fire up the Downloader and hit the New Download document button in the top-left. Paste the URL of the video that you like into the URL field and hit OK to rip the file. Now, load the Converter, hit Add FLV and locate the ripped file, then pick your conversion options as appropriate and you're away. For further instructions on either program, check out Moyea's web site support at **www.flvsoft.com/**.

Use FLV to Video Converter Pro 2 to capture any Flash videos you like from the web.

PHOTOGRAPHY

B&W photography

One of the most misunderstood types of digital imagery is the black and white image.

APC EXPERT

LEIGH D. STARK

Leigh D. Stark has an obsession for all things with the word "photo" in them and is rarely caught without a hat. He can often be seen teaching photography and has an almost unhealthy obsession with technology.

Usually reserved for people trying their hands at fine art, black and white photography is still regarded as one of the best forms of art on the planet. But every one of our digital cameras shoots in colour and, if you've ever looked at black and white modes on digital cameras, they often look dull and boring. Not like those intense black and white photos that you see when you go to an art gallery.

Making a black and white image is more than just converting it from colour. I won't go through all of the intricate details of how that works here because that's a course in and of itself. Still there is an easy way to make a monochromatic image in Photoshop that doesn't need you to spend any extra money on expensive plug-ins.

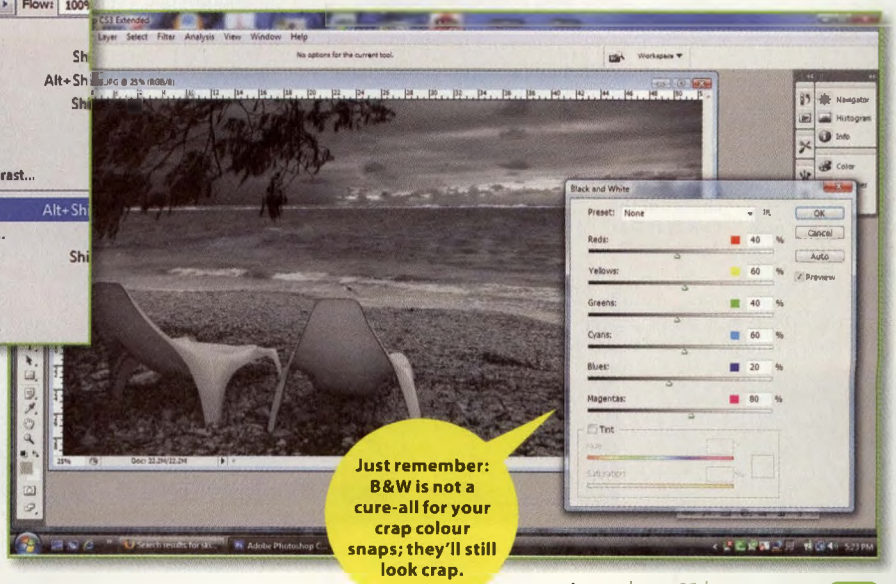
Since Adobe Photoshop CS3, graphic editors haven't needed to go through the irritating monochrome procedures of switching to Lab colour or mixing channels to get the desired result. It's far better than switching to grayscale too, as that's not even black and white and makes printing a hassle. The simple procedure that you can do is to go to the 'Image' menu, hover over 'Adjustments' and then select 'Black and White'. While not a new option, it's one that gets largely ignored by users usually because they don't know it's there.

In this menu, you can play with colour filtration levels that change the way a black and white is made. Each colour affects your image differently and playing with sliders can give you different results. For instance, if you drag that red all the way up, since there's a lot of red in our flesh, skin tones will become more white. Likewise if you bring the red and yellows of flesh down but bring the blues and cyans up, the skin becomes a detailed mess of dots and pores. Alternatively, and for the sake of speed, Adobe has included a list of presets at the top that emulate film and filter settings. If black and white isn't what you were after and you had hoped for maybe the browning that a sepia print can give or the blues that a cyanotype puts out, hit the 'Tint' checkbox at the bottom of the window. Drag the colour and saturation sliders and you can pull a result out much like that from a darkroom. Once you've got the look you're after, hit 'OK' and your image will be converted.

Now that you know how to move to black and white, there's one final thing you need to know: just because you've taken a bad shot doesn't mean it'll look good in black and white. Possibly the biggest cop-out of classic photography these days is for people to assume that their crap photos will look fantastic in an "arty" way. Unfortunately, that's not the case, and your crap images will still look like crap in black and white.

But if you're looking at light, focusing on composition, and you're sick and tired of the colour you're always getting from your shots, try using this technique to get to black and white. It might just make you pick up a film camera and go old-school on the world.

The Black & White option in Photoshop often goes unnoticed.



Just remember: B&W is not a cure-all for your crap colour snaps; they'll still look crap.

OPEN SOURCE CHALLENGE

Accelerate video

Interested in optimising your video viewing experience on your Linux box? Read on.

APC EXPERT

ASHTON MILLS

Ashton has been using Linux since Slackware came on floppies, and before that he was one of the three people in the world who used OS/2 (and loved it). Always ready to make the most of his PCs, he is constantly playing with Linux distributions and compiling the latest kernel. This is his idea of fun, and why we get him to write for *you*.

While Linux does everything Windows can, and often more besides, there's still one area when Windows has the advantage: GPU-accelerated video decoding. Unfortunately, because GPU manufacturers like NVIDIA and AMD lock down their code tighter than a bank vault (though AMD to a lesser degree, as it is gradually opening up to open source), it means there's little Linux developers can do to take advantage of GPUs for video; their hands are tied without support from these manufacturers. Fortunately, this situation is improving and in recent releases NVIDIA has made available its Linux binary drivers with an interesting new addition: VDPAU, aka. iVideo Decode and Presentation API for Unix.

This, in short, brings some of NVIDIA's PureVideo technology to Linux, whereby video decoding and post-processing can be offloaded to the GPU, for its GeForce 8 and alter-based GPUs. And why is this important? It's not vital, per se, for your video viewing experience, but it can have a tremendous impact on the performance and quality of playback.

Increasingly, as higher-resolution material becomes available (especially at 1080p compressed with H.264), the processing power to decode this can bring even a powerful modern processor to its knees. If the CPU becomes the bottleneck in video playback, skipped frames and stuttering are often the result. VDPAU offloads processing to the GPU, and thereby allows even low-end systems to decode high-quality high-resolution formats while providing smooth playback.

VDPAU is quite new and so, while it works well, the support required in third-party playback largely exists in development branches. This means you can't currently find support for it through your usual distribution packages of media players like Mplayer, Xine or VLC, but with a bit of elbow grease you can do it yourself.

INSTALLING VDPAU DRIVERS

First, you'll need NVIDIA drivers with VDPAU support. All drivers from 180.06 onwards provide ever-improving VDPAU support. The latest drivers at the time of writing are 180.37 and can be found at NVIDIA's FTP server: **ftp://download.nvidia.com/XFree86/Linux-x86/180.37/**. If you use a 64-bit version of Linux, the 64-bit drivers can be found under the 'XFree86/Linux-x86_64' directory.

If you've installed NVIDIA drivers manually before (as opposed to using the Restricted Drivers manager in Ubuntu) you'll see the filenames end in a '-pkg' version. If there are more than one -pkg version present in the download directory, grab the one with the highest number (usually -pkg1 or -pkg2).

Next, install the drivers: if you're currently using Ubuntu and the NVIDIA drivers installed through the Restricted Drivers manager you might want to disable these first. Installing newer drivers directly shouldn't prove a problem, but you won't be able to return to the older drivers that Ubuntu installs from the Restricted Drivers manager.

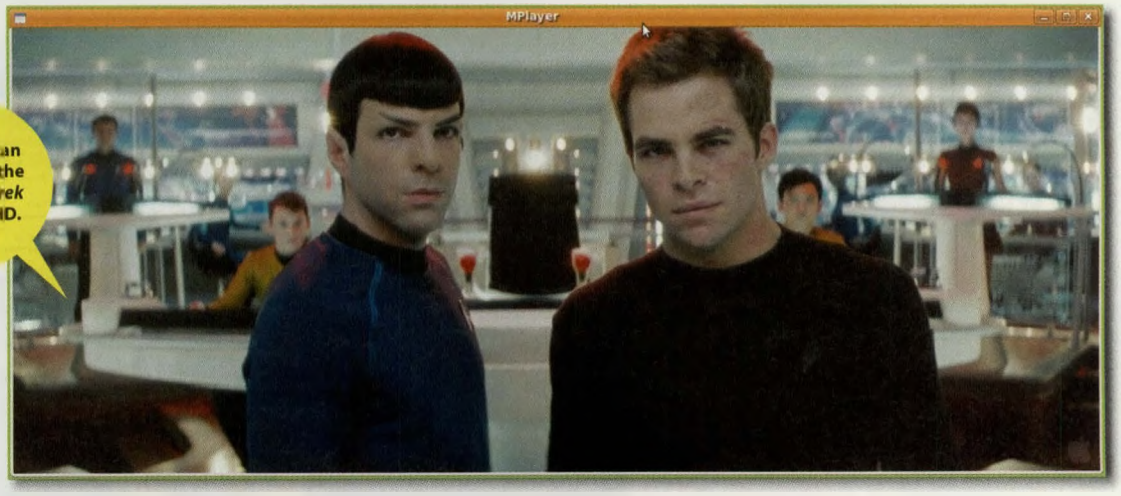
Installing the drivers from NVIDIA's downloadable binaries is easy thanks to NVIDIA's automated installer but does require a few steps first. Start by logging out of your system and pressing Ctrl+Alt+1 to bring up a full-screen console. From here, do the following:

Close down the X Window system and install the necessary packages:

```
sudo /etc/init.d/gdm stop
```

This will close down your X Windows session, and is necessary as the NVIDIA drivers won't install while the GUI is in use. Next, you need to make sure the headers are installed for your kernel, as the driver installer will compile them against your current kernel:

```
sudo apt-get install build-essential linux-headers
```



Now you can check out the new *Star Trek* trailer in HD.

Now you're ready to install the drivers. Simply run the downloaded -pkg version you downloaded with the shell command:

```
sudo sh NVIDIA-Linux-x86_64-180.37-pkg2.run
```

Follow the prompts (basically, press enter a few times). When it asks you if you want to modify your xorg.conf file, select yes if this is the first time you've installed NVIDIA drivers. From here you can manually remove the older drivers you might already be using and restart GDM, but you might as well reboot and save yourself some keystrokes:

```
reboot
```

INSTALLING MPLAYER

With the drivers installed the second half of the of VDPAU equation is a media player with VDPAU support. This is in development for a number of Linux media players, including Mplayer, and while there are instructions for grabbing NVIDIA VDPAU patches and applying them against the latest development source code of Mplayer to enable VDPAU support, fortunately you don't have to do this yourself. Thanks to a user called Avenard, a pre-compiled VDPAU patched version of Mplayer is available in .deb format for Ubuntu users. To install it, first add Advenard's repositories by clicking 'System > Administration > Software Sources'. Under the Third-Party Software tab, click Add and then enter the following:

```
deb http://www.avenard.org/files/ubuntu-repos release/
```

Click Close and you will be asked if you want to refresh your local database, click Reload. Now you can install the updated Mplayer just like any other app. If you already have Mplayer installed, it will be updated to the new dev. release from the repository:

```
sudo apt-get install mplayer
```

You'll notice you'll be prompted to install some extra packages, including an NVIDIA VDPAU package. This is necessary, so say Yes to installing the dependencies. Now, you're ready to play GPU-accelerated videos!

PLAYING WITH MPLAYER

To really see a difference make sure you have some high-resolution H.264 source videos available. There are quite a few places you can get samples (see the 'H.264 sources' sidebox).

If you launch Mplayer with the default settings and your video, while keeping the Gnome System Monitor open (or using 'top' at the command prompt) you'll see the updated development version probably still performs a little better than the Ubuntu bundled Mplayer, but is still processing video decoding on your CPU:

```
mplayer [video file]
```

For Mplayer to make use of VDPAU support, you need to tell it do so:

```
mplayer -vo vdpau -vc ffh264vdpau [video file]
```

The '-vo' switch is Mplayer's video out device, selected from a range that's determined by compile-time options. The '-vc' flag tells Mplayer to specifically use, here, the FFMpeg H.264 VDPAU codec. This will work for H.264 encoded files, but what if your media is encoded with Windows Media, or standard MPEG? No worries, there are VDPAU codecs for these too. To see which options are available, enter:

```
mplayer -vc help |grep VDPAU
```

And there you have it, accelerated NVIDIA-based GPU playback. And just what sort of difference does it make? Quite a substantial one: using the 1080p *I am Legend* trailer (an example source at 1,920 x 816) standard non-accelerated Mplayer ate up around 60% of CPU power at peak on a dual-core Core 2 Duo E8600 with an NVIDIA GTX280 based card. Using the VDPAU enabled Mplayer this dropped to an amazing 2% usage for the Mplayer process. What was before a large work-load becomes an insignificant one. For HTPC systems, where low-power CPUs are often used to reduce heat and noise, VDPAU can be the difference between being able to play back high-resolution 720p or 1080p sources seamlessly or not, if at all.

Obviously manually setting up and playing high-resolution H.264, VC-1 or WMV media files isn't as easy as just clicking on a file and playing it in Totem, but in the near future the VDPAU-enabled builds for Mplayer, Xine and VLC will make their way to distributions and, with them, the latest stable NVIDIA drivers with VDPAU support bundled in as well. We might be lucky to see this with Jaunty Jackalope (Ubuntu 9.04), but, if not, certainly the following release.

ABOUT... H.264 SOURCES

There are plenty of sources for 1080p material if you look online, but here are some good samples and places to start:

Elephants Dream
www.orange.blender.org

Big Buck Bunny
www.bigbuckbunny.org

Apple's HD samples
www.apple.com/quicktime/guide/hd

HD greetings
www.hdgreetings.com/other/ecards-video/video-1080p.aspx

HD movies trailers
www.digital-digest.com/movies

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94 Twenty registry hacks 97 Build web apps with Silverlight

HARDWARE

Power up your notebook

Is your notebook computer starting to feel sluggish? **Karl Hodge** walks us through several DIY upgrades.

WHAT YOU'LL NEED

A LINUX DISTRO

Here we'll be using Fedora Linux. We recommend that you install version 8 or higher.

One of the wonders of the modern computer is its modular nature. And at times like this, when money may be tight, it's more tempting than ever to open up your PC's case and effect an easy upgrade instead of spending much, much more on a new system. Some extra memory will improve your machine's ability to multi-task, while a faster hard drive will enhance file writing.

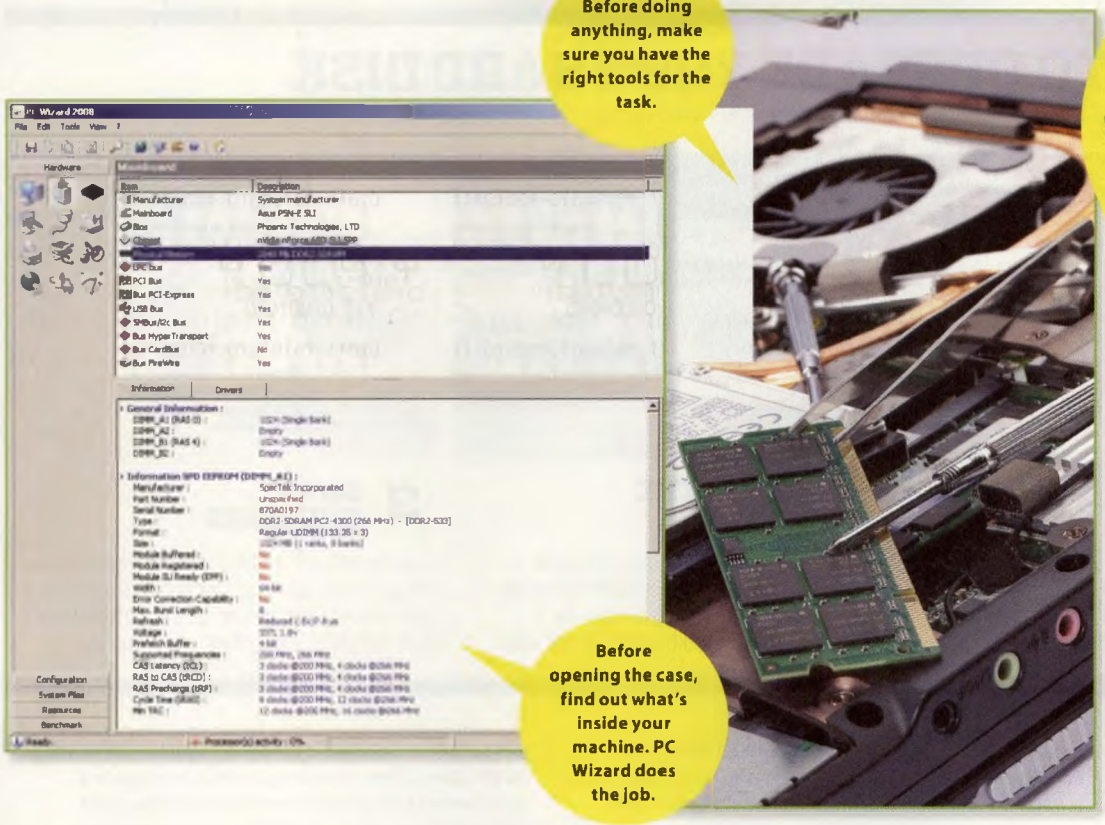
The proposition changes a little if your system is a notebook — but it needn't. Your notebook is in many ways just as easy to upgrade as your desktop. All it takes is a little more preparation. Here we pass on the tips that we've learned from cracking open the shells of numerous notebook computers, from picking the best tools for the job to finding the right guide to help you do things properly.

Upgrading a notebook is very different to upgrading a desktop PC. Whip off the case of a standard tower and the motherboard is instantly exposed, with the slots, CPU and drive all easily accessible. In a notebook, the components are crammed into a much smaller space and are often layered on top of each other.

Some forward-thinking manufacturers design their

Lacking a floppy drive? You can find CD ISO images that will flash upgrade your BIOS at *www.bootdisk.com*.

A set of Torx screwdrivers is handy for screws with hex or star-shaped heads.



Before doing anything, make sure you have the right tools for the task.

Before opening the case, find out what's inside your machine. PC Wizard does the job.

machines to provide easy access to the parts that are most likely to be upgraded. On the back of a Toshiba Satellite Pro, for example, you'll find cutaway hatches for accessing the RAM, Wi-Fi card slots and the hard disk. Other machines hide their wares, requiring you to remove the keyboard and sometimes even other components before you can get at a part to upgrade it.

WHY BOTHER UPGRADING?

There are three good reasons for upgrading your notebook. The first, and most important, is cost. You can easily eke out the effective life of a notebook with a cheap upgrade or two.

Another reason for cracking open your notebook case is to make repairs. Notebooks are prone to drops and knocks; components can come loose and elements with moving parts are easily broken. You'll save yourself a bundle in labour costs if you're confident enough to replace an ailing optical drive or sticky keyboard.

Our third reason for carrying out some DIY upgrades is to make your notebook a better, stronger and faster device. Adding the latest Wi-Fi card or a solid state drive to speed up data access could transform your notebook from a mobile standby into an effective desktop replacement.

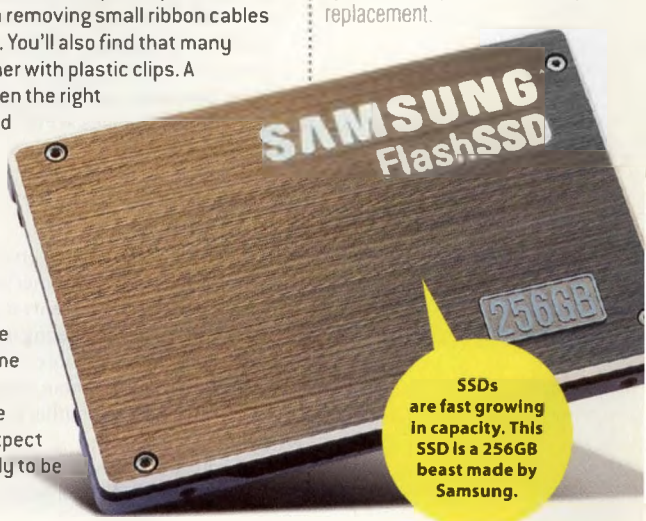
BEFORE YOU START

It's important to begin with the right tools. While modern desktop cases are held together with quick-release catches, you'll need at least a small Philips head screwdriver to tackle a notebook case. A cheap, basic set of electrical screwdrivers should be fine, although in some cases we've had to resort to a powered screwdriver to loosen tightly fitted screws. Some notebooks — notably from Dell and Apple — have Torx screws to deal with, which have a star-shaped slot at the top. It might well be worth investing in a set of screwdrivers for those as well. They're not expensive and will come in handy for small hex socket screws too.

In rare instances you may need a soldering iron, but only to repair any damage you've wrought by being over-eager with your modifications. You'll find all the tools that we've mentioned here in your local DIY shop or online.

These are standard tools, but we've found that a couple of other bits and pieces come in handy too. A telescopic magnetic pick-up tool can be useful for grabbing small screws that have fallen down cracks. A pair of pincers or tweezers will help you when removing small ribbon cables or motherboard connectors. You'll also find that many notebook cases click together with plastic clips. A plastic putty spreader is often the right size to get between gaps and strong enough to give you some leverage without causing too much scratch damage to the exterior case. Of course, you'll only need something like this if you're planning on fully disassembling your machine — and hopefully it won't come to that.

No notebook model is the same as another. You can expect notebooks in the same family to be



SSDs are fast growing in capacity. This SSD is a 256GB beast made by Samsung.

Missed a tutorial?

Go to apcmag.com or www.magshop.com.au for back issues of APC

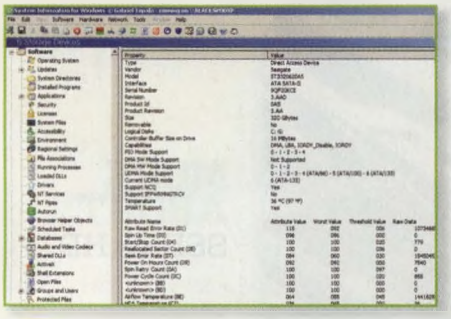
MORE ABOUT...

SSD vs HD

A solid state drive (SSD) would seem like an ideal component for a notebook computer, as it's resistant to knocks and faster than traditional hard disks. Swapping your existing drive for an SSD is only cost effective in limited circumstances, however. SSDs are expensive, and a generic 64GB 2.5in drive costs around $260 on Staticice.com.au. By contrast, the same money could buy you two 320GB Western Digital Scorpio Blue HDDs with some change left over. Still, if you're upgrading an old notebook with a small drive, shorter boot times and faster file throughput might be more tempting than extra storage space. In some cases, you may not have to choose one over the other. If your machine is relatively modern and the screen is bigger than 17in, chances are that there's a second SATA slot in your case. Adding an SSD in this slot could turn an already top-flight system into a plausible desktop replacement.

3 STEPS HOW TO UPGRADE YOUR HARD DISK

Just follow these three simple steps to swap out a hard drive.



1 IDENTIFY DISK TYPE

Identify the kind of hard disk required. Recent machines usually have a 2.5in SATA hard disk, but older ones are likely to use IDE/ATA interfaces. Use System Information for Windows to find out.

2 ACCESS THE HARD DISK

Hard disks can be accessed through a back panel and will likely be held in place with a case and screws. It will either plug directly into a motherboard socket or with a short ribbon cable.

3 SWAP THE DISKS

Unscrew and pull the hard drive from its socket, lifting the case free too. Slide out the old drive and replace it with the new one. Slot the drive and case back into place, secure them and close up.

FACT...

One of the easiest upgrades to perform is replacing your notebook battery. Over time your battery loses the ability to hold charge, whatever technology it's based on. If your notebook isn't running for as long as it used to, it might be time to buy a new power cell.

broadly similar, but it's never guaranteed that all the screws are in the same place, or that the hard drive always slots into a handy bay on the side. Sometimes you have to remove the keyboard to get to a screw, or take off the back to access the hard drive.

Before you start, flip over your machine and take a good look at the bays and ports on the back and sides. If it's not clear how to easily access a component, don't go blundering in: read the manual first. Some notebook manufacturers provide service manuals online, including Dell (**www.support.dell.com**) and HP (**http://welcome.hp.com/country/us/en/support.html**). Web sites dedicated to 'take-apart' guides — documents created by enthusiasts that detail disassembly procedures — are also helpful. If you have a Toshiba notebook, try **www.irisvista.com**. MacBook owners are well served by iFixit (**www.ifixit.com**). The largest repository of guides we've found is Repair4Laptop (**www.repair4laptop.org/notebook.html**), which hosts a list of guides for notebooks from around 100 manufacturers. If none of these sources comes up with the goods, try 9 Manuals (**www.9manuals.com**). Here you'll find a splendid set of official service guides in PDF format that you can download for US$5.99.

GATHERING TECH SPECS

The main difference between a service manual and a take-apart guide is that the former will give you a full, official overview of the components in your machine. That's important when considering upgrades. An official guide should answer all sorts of questions, like what kind of memory you need, if there are any spare USB or PCI-E ports in the machine and whether the optical drive is of a standard size.

If you don't have access to a full service manual, you can interrogate your notebook's architecture using free software tools. We recommend System Information for Windows, a freeware program that interrogates your computer and digs out valuable hardware and software information. It can tell you what drives you have installed and what the interfaces are, what kind of RAM is present and more. You can even use it to retrieve software licences and passwords, which will come in handy for your pre-upgrade back-up routine.

A similar program, PC Wizard 2008, is also free. It supplies you with sufficient data to attempt upgrades, though in less detail and with no software information. It also includes a handy benchmarking tool, so you can measure any improvements in performance after you've upgraded.

Some guides recommend a BIOS update before upgrading. We think that's only really necessary in two specific circumstances: if your machine is having problems that diagnostic tests suggest are BIOS-related, or if you want to install components that your current BIOS won't support. We say this because flashing your BIOS is a procedure that can turn your notebook into an unbootable brick if done badly. It's also trickier to carry out on notebooks than on desktop PCs, because most lack a floppy drive.

One way around this is to boot into Windows using an old install disc and then access the BIOS upgrade — available from your motherboard manufacturer — from a CD-RW. Alternatively, and more safely, try **www.bootdisk.com** for DOS and Windows boot discs, including a bespoke 'Flash CD' with BIOS upgrade instructions.

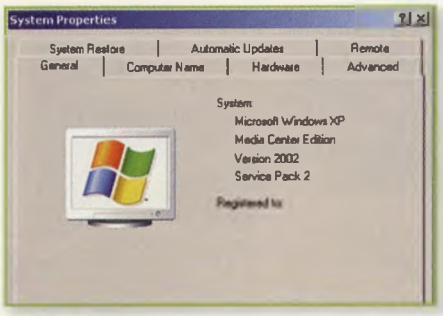
STANDARD PROCEDURES

Now that you have the right tools, have correctly identified the part that you want to replace and have a service manual or disassembly guide to work with, you're ready to begin the upgrade process.

As with desktop upgrades, your machine shouldn't be

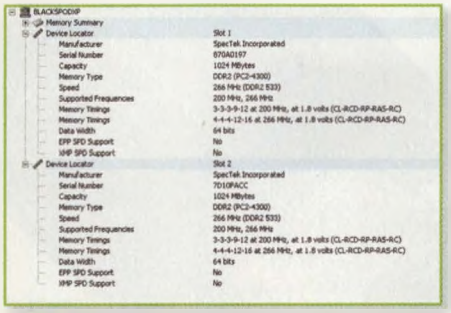
6 STEPS HOW TO UPGRADE YOUR NETBOOK'S RAM

Just follow these six simple steps to add extra RAM.



1 IDENTIFY YOUR SETUP

To find out how much RAM you already have, right-click 'My Computer' and select 'Properties'. For exact details, use the free tool System Information for Windows (**www.tinyurl.com/ytne47**).



2 KNOW YOUR LIMITS

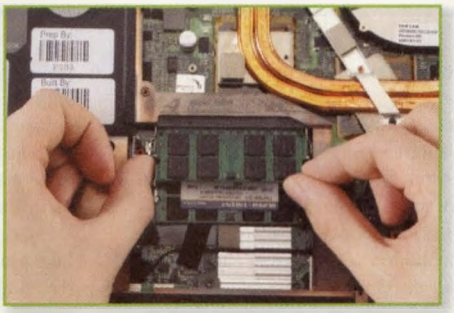
The physical memory limit for the 32-bit versions of XP or Vista is 4GB, but they may only report 2.75GB to 3.5GB of that. There may be ways to work around this, but it's usually best to limit yourself to 3GB.

3 BUY THE RIGHT RAM

Your motherboard may also impose some limits. To find these out (and check the memory type you need) go to Crucial's Memory Matcher at **www.crucial.com**. Next, buy the appropriate modules.

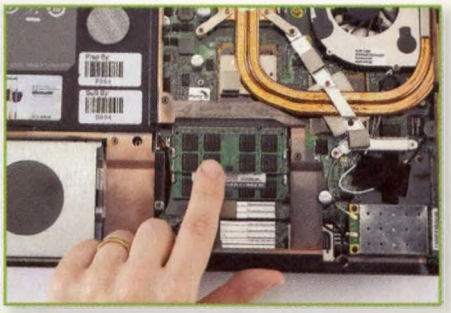
4 OPEN THE CASE

On many notebooks, memory slots are accessible through a single panel on the bottom of the machine, making this an easy upgrade to perform. Remove the panel to expose the existing RAM chips.



5 REMOVE OLD RAM

In notebooks, RAM modules are often staggered on top of each other. Levers on both sides of each chip hold it in place. Push these outwards to release the modules, gently pulling the chip to remove it.



6 INSERT THE NEW RAM

Touch some metal to dissipate static before handling the new RAM. Take a module and align the pins on the chip with the vacant slot at a 45° angle. Push in and then down until it clicks into place.

plugged in to the mains — that's just common sense. Ensure that the system is fully powered down — not just hibernating — and then remove the main battery. This step is vital. If you miss it, you could damage your system or get a shock when you open up the machine.

Next, touch something metal to dissipate any static in your body and bear in mind that you should continue doing this periodically if you're going to be working on the machine for a long time. It should go without saying, but proceed carefully.

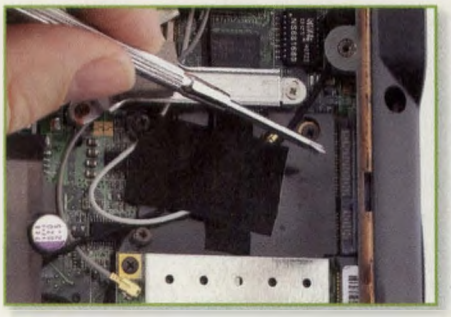
Once you're into the case, remove elements slowly and keep an eye out for ribbon cables and small wires. Unless you have to access the motherboard or PSU, it's rare that you will have to fully disassemble your notebook. Take care with where you put the screws as you remove them from the case. The best way to keep track of them is to write down where you retrieved them from on a piece of paper and stick the corresponding screws next to the description with tape. For example, if you're removing five screws from the back panel, write down 'Back panel — five screws'. It doesn't take long and will save you a lot of time when you come to the reassembly stage. Better still, some notebooks have a unique identifier printed next to each screw.

MEMORY FIRST

RAM is simple to upgrade in tower PCs, and the same is often true for notebooks. In many cases you can access RAM slots without taking your machine apart at all; many modern notebooks have memory access ports that are covered by a single plate. As for finding out what kind of RAM to buy, try Crucial's Memory Advisor (**www.crucial.com**) or visit Kingston's memory tools web page (**www.kingston.com/tools**). Both will tell you what kind

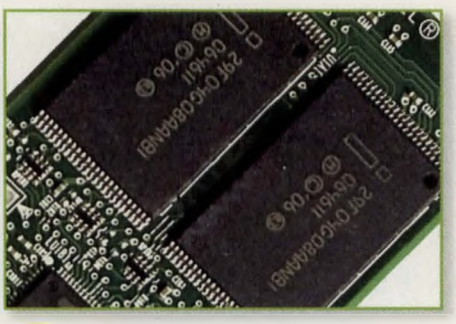
3 STEPS HOW TO UPGRADE YOUR MINI-PCI MODULE

Just follow these three simple steps to upgrade your module.



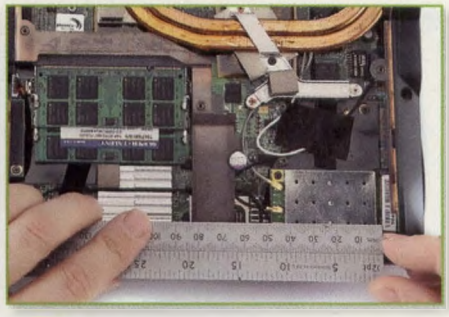
1 WI-FI UPGRADES

Notebooks made after 2005 usually come with one or more PCI Express mini card ports inside. The most common use for this port is to fit a Wi-Fi card to a machine without one, or for upgrading.



2 TURBO MEMORY CARDS

Vista users may benefit from an Intel Turbo Memory card, which is available as a Mini PCI-E module. Like ReadyBoost, it increases system speed by moving data that's accessed often into flash memory.



3 CHECK THE SPACE

The Medion Akoya Mini ships with 1GB of RAM. You'll notice that there's only one SODIMM slot, and that it's already occupied. We're going to replace the existing memory with a new 2GB stick.

MORE ABOUT... EXTREME UPGRADES

Your laptop's graphics card is one of the most difficult components to replace, with bespoke assemblies and integrated solutions common. One possible solution is to overclock the card instead. We suggest trying the more tentative software route first, using a tweaker such as RivaTuner for NVIDIA or ATI chipsets (*www.guru3d.com/rivatuner*). The same advice might be true of CPU upgrading: a job that even desktop upgraders baulk at. The first step is to flash the BIOS to the latest version and to ensure that the chip you've chosen is supported by your motherboard. Some notebooks have the CPU soldered in place, so check this before you buy new components. You'll need to remove the heatsink over the chip, take out the CPU, fit the new one and then prepare it with thermal paste before replacing the heatsink.

of RAM you need and the maximum amount that your system can use.

Adding RAM increases system performance by reducing swap file and virtual memory requirements. The more RAM that's available, the more effectively programs will run. An even cheaper way to improve memory handling for Windows Vista users is ReadyBoost, which uses flash memory as a drive cache. Vista's not fussy about the kind of flash memory used, so for not much outlay you can effectively add 4GB of virtual memory to your machine with a single removable USB key.

Intel's Turbo Memory system — codenamed Robson — takes this technology a step further. It uses flash memory on a PCI Express mini card to reduce the load on your hard disk by moving your frequently accessed files to an onboard solid state drive. This is an integrated upgrade that's installed into a slot on your motherboard. Intel says that having this cache located close to the CPU significantly boosts disk performance.

The PCI Express mini card slot is mostly used in modern notebooks for Wi-Fi provision. Chances are that if your old machine has an accessible slot, there'll already be a Wi-Fi card in it. Some modern notebooks may have a spare second slot, so check your documentation, as this can offer some of the most interesting upgrade routes available to laptop owners. As well as Wi-Fi and Turbo Memory, digital TV tuner cards such as the Avermedia A306 (**www.avermedia.com/avertv**) and internal GPS systems such as the AzureWave GPS Module (**www.azurewave.com**) can also be installed into this slot. There are even consumer 3G cards lurking just beyond the horizon.

HARD AND OPTICAL DRIVES

Although notebook hard drives are fairly generic and conform mainly to a specific 2.5in form factor, you'll find several variations in the way that they're fitted. Some are accessed through a panel on the bottom of your notebook, while others slide into a bay on the side in a similar way to your optical drive. The hard disk could even be buried under several other components and require a partial disassembly — as is the case with the early iBook — before you can access it. Still, once you've found it, replacing a hard drive is a fairly easy procedure. Take a look at our 'Upgrade your hard disk' walkthrough (two pages back) for an easy-to-follow guide to the upgrade process.

For peace of mind, make sure that you back up the contents of the old drive before proceeding. Just backing up documents is never quite enough to ensure that you've got all your data, so try the free tool CloneZilla (**www.clonezilla.org**) and make a full copy of your hard drive.

CD and DVD drives are similarly generic, with a standard 5.25in device fitting into most machines. However, there are exceptions to this, so it's worth checking that the drive you're buying is compatible with your machine before you proceed. You'll also need the right fittings, including the correct faceplate and runners. If you're replacing an old optical drive then you should be able to reuse those parts from it, but there's always a chance that things won't work out so, again, it's best to check first.

In most cases, replacing the optical drive is a fairly easy upgrade, with the device fitting into a bay in the side of the machine. It's often a case of undoing a couple of screws, sliding out the old part carefully and then sliding in the new one, making sure that the connectors are pushed home. Replacing an old CD drive with a DVD-RW one is now a fairly cheap and worthwhile upgrade to make.

Upgrading your notebook will require a lot of preparation and patience, but if you carefully pick the right approach, do your research first and always proceed with caution, you can add years to the effective lifespan of your trusty machine.

HARDWARE

Win 7 on the go

If you're running Windows Vista on your notebook, will switching to Windows 7 improve your lot?

Windows 7 is set apart from the previous batch of Microsoft OS upgrades by many factors. First, it's designed to be compatible with Vista hardware and drivers. This means that, in theory at least, a laptop capable of running Vista comfortably should run Windows 7 just as happily. Second, the public beta was made widely available and lasts up to six months. This gives the testers a long period to help iron out teething issues before the OS's release, instead of users having to wait for important fixes to be sorted in the first service pack.

ULTIMATE FEATURE-SET

If you took advantage of the beta, it's worth knowing that this was the Ultimate edition of Windows 7. It includes features that may not be present in more basic versions. It seems likely that features such as Offline Files, restricted to the Business and Ultimate versions of Vista, will also be reserved for premium versions of Windows 7.

That's unlikely to effect the OS's upgraded mobile features, though, which make Windows 7 more notebook-friendly. For example, the Windows Mobility Center — which enables you to turn on presentation mode, synchronise files or change power schemes — was present in Vista, but it's much easier to find and access in Windows 7. All you need to do is right-click the Network icon in the System Tray and select 'Windows Mobility Center'. Likewise, clicking the Battery icon enables you to change preset power schemes or move directly to editing the options in-depth. These are everyday tasks, so it's good that they aren't hidden away.

Power management on the whole is better than in previous versions of Windows. On a simple level, the faster boot time means that you're spending more battery life working than waiting for your laptop to start up. However, there's also smarter power management happening in the background that employs several tricks to squeeze a little more juice from your battery. The processor gets stood down more frequently when not in use, as does the network adaptor. This alone could make the upgrade worthwhile, especially if you spend a lot of time running on battery power — try weighing up the eventual retail price of Windows 7 with that of a new laptop battery. As in Vista, if battery time is crucial, you can also save some more energy by choosing a non-Aero theme.

GET CONNECTED

Wireless network management is now simpler, too. All you need to do is click on the wireless icon in the System Tray to see a list of available networks. You can quickly refresh this list and join one of the available networks with a single click if you've previously provided the passkey — handy if you spend a lot of your time moving between hotspots.

It's also worth mentioning the Taskbar improvements. You can pin any program you like to the Taskbar to launch it quickly, which is ideal for oft-used favourites. The Aero Peek feature extends window thumbnails to individual previews of stacked applications, which is useful for de-cluttering a crowded work space.

The overall picture is really one of small improvements that add up to create a worthwhile upgrade. At first glance, Windows 7 doesn't look and feel much different to Vista, but the simple logistical improvements and enhanced efficiency make it well worth taking the plunge when upgrading your laptop. APCMAG

HOME GROUPS

Windows 7 sorts out the most common home networking issues in one place.

The HomeGroup feature enables you to share files and devices freely at home and protect them as soon as you move your laptop to a different network. When you set up a HomeGroup between two or more Windows 7 machines, one generates a secure password that you can use when adding more computers. You can then change which file types you share from the HomeGroup Settings in Control Panel. Public folders assigned to these types are given read/ write access, while personal ones have read-only permissions by default. On other networks these files aren't shared and are kept secure, but as soon as you get home and join the group, they're shared again.

VIDEO

Create movie special effects

Add light swords, muzzle flashes and pyrotechnic effects to your home movies. **Christian Darkin** explains how.

WHAT YOU'LL NEED

VISIONLAB OR EFFECTSLAB PRO

Both are visual effects and compositing packages aimed at the budget filmmaker. You can find a trial version at *www.fxhome.com*.

Flashy visual effects aren't just the preserve of Hollywood blockbusters with budgets the size of a banking bailout. Effects such as explosions, lasers, light swords and fireballs are pretty easy to produce with the right software.

And right doesn't necessarily mean expensive, either. Adobe's After Effects (a professional tool of choice for this kind of work) weighs in at about $1,500 and takes a substantial commitment to learn. However, both the trial version of FXhome's VisionLab and EffectsLab Pro (either will work for this tutorial) concentrate only on certain types of effects, making them much easier to learn than their more expensive rivals.

In this tutorial, we'll be getting to grips with muzzle flash and adding a rotoscoped light sword to your home movies.

1 PLAN YOUR SHOOT

In any scene containing special effects, planning is crucial. You need to know exactly which shots you have to film and how you plan to use them. In general, effects are easier to apply to well-focused, well-lit images without rapid camera movement. There's no substitute for getting good footage, as trying to fix shots during the editing process is time-consuming and difficult.

Working with a fixed camera on a tripod will make adding a number of effects easier. And if you're planning a complex effects sequence, try to grab some empty background plates — shots of your scene with identical camera positions and lighting conditions, but without the actors. When you have to place effects between your actors and the background, these shots will become invaluable.

CAUSE AND EFFECT

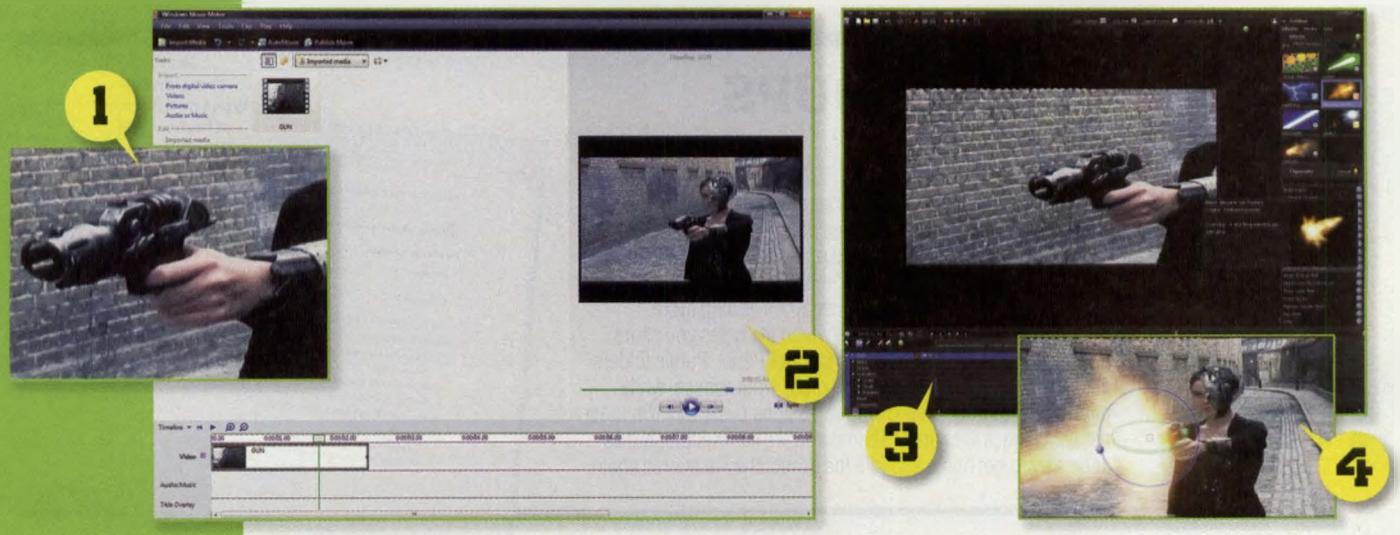
If there's one thing that really 'sells' a visual effect to the viewer, it's the reaction to that effect by people and objects in the shot. If something scary happens, it will look far more convincing if you have real people running away in terror. Getting this right on scene can require some practice. Similarly, a glowing fireball is much more convincing if you can place a real light to mimic its effects on the objects in the scene.

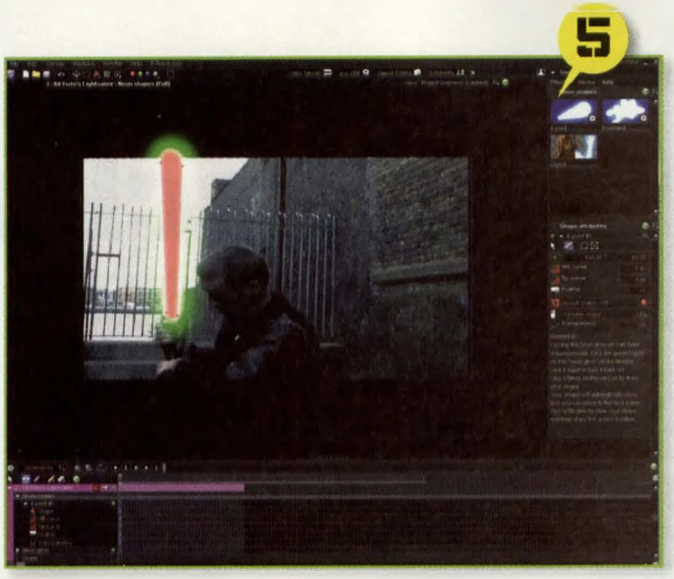
2 CAPTURE AND TRIM

With your footage ready, you'll need to transfer it into your computer and edit your film using a video editor (Pinnacle Videospin and Windows Movie Maker are two free examples). Select the individual shots you plan to add effects to, export them as high-quality AVI or QuickTime files, then load up VisionLab and use 'File > Import Media' to bring in your first clip. Importing only the frames that you need for your effect will make the whole shot easier to work with.

3 ADD A MUZZLE FLASH

Your shot should appear in the timeline at the bottom of the screen and you can scroll through it by dragging the Playback arrow at the top. The current frame is displayed in





the middle of the screen. This shot needs a muzzle flash, so select the Effects tab at the top right and click the 'Muzzle Flash' icon. A list of presets will appear underneath. Click the 'I' icon next to each preset to see its thumbnail. Find a suitable one you like, then drag it onto the keyframe.

The presets range from realistic weapons to sci-fi and fantasy effects. Here, we chose to use the 'Machine Gun Flashes' preset, which is a long effect, but most of the muzzle flashes are single shots lasting a few frames.

4 SET ITS PARAMETERS

The muzzle flash now appears on the timeline as a purple rectangle. You can drag the rectangle back and forth in time so that the muzzle flash begins at exactly the right point in your clip. Now click the triangle at the left of the timeline and select Flash Attributes. The controls for your muzzle flash appear in the right-hand panel, and the monitor shows controls for placing and orientating the effect. Drag the square at the centre of the effect to move it over the gun's muzzle, then use the 'X' and 'Y' controls to align it with the barrel.

FINE-TUNE ATTRIBUTES

The Effects Attributes panel at the right of the screen offers a slew of tools to fine-tune your effect, but the only one you'll need often is the Scale control, which is used to resize the effect. In our case, the effect was too big for the gun, so we scaled it down.

Halfway through our shot, we switch to a close-up and this means the shot's scale changes. To make the effect follow suit, find the first frame after the cut and resize the effect. Now you need to go back one frame (using the set of controls above the timeline) and shrink the effect to its original scale. Play back the footage and the flashes should be the correct size in both shots.

You'll probably discover that the muzzle of the gun moves slightly in the shot. To make sure that the effect follows this motion, step through the clip a few frames at a time and drag the flash to the right position whenever it drifts off. Blue marks on the timeline indicate keyframes where you have moved or altered the effect.

OTHER ATTRIBUTES

The other controls on the Effects Attributes panel allow you to alter your effect's colour, shape and firing rate. You can also choose images to act as textures for each element of the flash (smoke, flame, and so on). Messing with these variables means you'll be able to create a huge range of effects once you master the controls.

Remember that each time you alter an effect, you create an animation keyframe. This means you'll need to stick to the first frame when adjusting your effect, or you'll inadvertently produce an animation of the effect rather than changing the whole thing.

5 ADD A LIGHT SWORD

Our next shot involves a light sword. During filming, the actor used a stand-in prop (a broom-handle is ideal) to help us place the effect in post-production. With the footage imported, pick 'Neon Light' from the Effects menu and then choose 'Kit Fisto's Lightsaber' as the preset. Select the effect on the timeline, click the four-point item, and then on the monitor to place the four corners of the effect over the stand-in prop. Finally, pick the Crop tool at the top left of the timeline and drag out the red rectangle so the effect extends to the clip's edges.

You can change the colour of your light sword and alter the strength and size of its glow in the Effects Attributes panel.

ROTOSCOPE THE BLADE

Here's the bit you're not going to like: you now need to step through your entire clip, one frame at a time, repositioning the corners of your effect so they cover the prop sword in every frame. There are no shortcuts, and the better a job you do, the more realistic the effect will look.

When the sword is stationary, skip repositioning for a few frames to prevent flickering. When it's in motion, you'll need to extend the effect's shape to cover the range of motion between frames, so the glow extends over the prop's blur.

6 RENDER YOUR CLIP

Once you're done tweaking, select 'Render Settings' from the Render menu, choose the same format as your footage and output your effect as a QuickTime or AVI file. Finish by importing it into your editor and cutting the effect into the final scene.

DO THIS... ADD EXPLOSIONS

VisionLab explosions are found under the Particle Effects tab and can be dragged onto a shot in the same way as any other effect. The ones included with the package are best for sci-fi effects, featuring smoke, sparks and laser flashes. However, you can download more presets from the FXhome site, or create your own by experimenting with the settings.

But an explosion just laid onto a shot often isn't convincing. You need to make it affect the whole scene by adding scorch marks, flying debris and lighting effects too. A good first step is to make a copy of your background frame and add damage to it in a photo editing package. You can then fade this in over the original shot as the explosion hits.

PERFORMANCE

20 Registry hacks

Want a faster, more secure and more productive PC? Get stuck into some Registry editing. **Mike Williams** explains 20 handy hacks.

WHAT YOU'LL NEED

A PC – AND SOME PATIENCE

You won't need any special hardware to get started with Registry hacking, but you will need to exercise some caution, to make sure things don't go wrong.

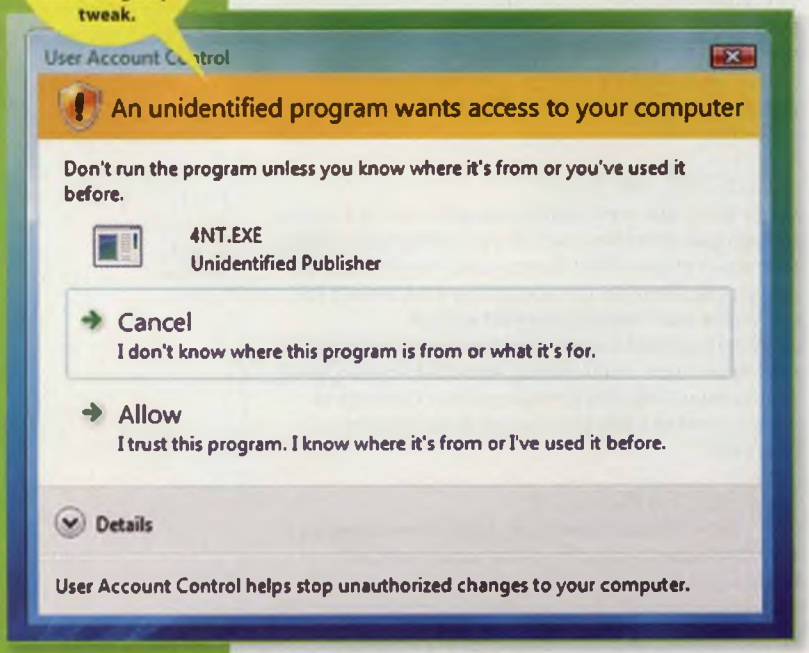
Right-clicking on everything is a good way to learn about hidden Windows functionality. Exploring the lesser-known Control Panel applets is another useful technique, and browsing the command line applications in Windows' System32 folder can be interesting. But let's be realistic. There's nothing that quite compares to the Registry. It's packed with useful settings that can improve performance, fix security holes and change even the most fundamental Windows behaviour for the better. And many of these features simply can't be accessed in any other way.

Be careful, though: the Registry has more than its fair share of traps. If you're not cautious, you could cause more problems than you solve. But with a little care you can get on with creating a better system that's tailored towards your needs. Here are 20 great Registry hacks that everyone should know about.

1 IMPROVE SECURITY

If strangers have physical access to your PC, it's easy for them to plug in a USB flash drive and make copies of your data. If you're using Windows XP SP2 or later, though, there's a simple way to prevent this from happening. Go to 'HKLM\SYSTEM\Current ControlSet\Control\StorageDevice Policies', create a DWORD value called 'WriteProtect' and set it to 1. You'll be able to read USB drives, but not write to them any more.

Ditch the UAC prompts but keep IE protected mode with a Registry tweak.


User Account Control
An unidentified program wants access to your computer
Don't run the program unless you know where it's from or you've used it before.
4NT.EXE
Unidentified Publisher
Cancel
I don't know where this program is from or what it's for.
Allow
I trust this program. I know where it's from or I've used it before.
Details
User Account Control helps stop unauthorized changes to your computer.

2 TAME UAC

Windows Vista's User Account Control raises so many alerts that many people just turn it off. But do that and you'll also lose useful features like IE's protected mode.If you really can't live with UAC, try disabling the alerts for administrators: you won't get any more hassle, but UAC will run in the background and you'll still get its other features. To do this, set 'HKLM\Software\Microsoft\Windows\CurrentVersion\Policies\System\ ConsentPromptBehaviorAdmin' to 0. You can restore normal UAC behaviour by setting it to 2.

3 CHANGE THE OWNER

Install Windows on your PC and you'll be asked to enter your name, which is then stored as the registered owner (run WinVer to see this on your system). If you've got a second-hand PC, you probably want to change the name stored as the registered owner. There's no obvious way to do this, and that's where the Registry comes in. Browse to 'HKLM\SOFTWARE\Microsoft\WindowsNT\ Current Version' and you'll see both a 'RegisteredOwner' and 'Registered Organization' value. Double-click either to change them.

4 SORT FILES PROPERLY

Sorting filenames in Explorer can be a problem. By default, it will place 'File_v2.txt' before 'File_v15. txt': that's not ASCII ordering, but it seems to be sensible. But what if the 'v' refers to a version number, and actually File_v15.txt should come first? Suddenly Explorer's default system doesn't work at all.

To restore regular ASCII file ordering, go to 'HKLM\Software\Microsoft\Windows\Currentversion\Policies\Explorer', create a DWORD value called 'NoStrCmpLogical' and set it to 1. Delete the key to restore the standard Explorer approach.

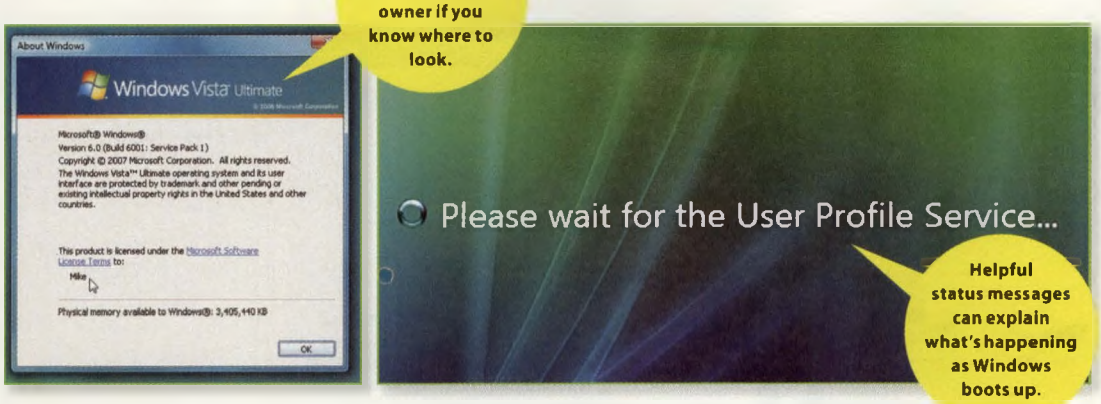
5 TROUBLESHOOT STARTUP

If Windows is taking its time to start up or shut down, there might be a problem. To find out what's going on, go to 'HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System', create a DWORD value called 'verbosestatus' and set it to 1. Restart your PC and Windows will tell you what it's getting up to.

6 MANAGE FOLDER TYPES

Windows Vista's Explorer will 'intelligently' choose your folder type based on its contents. But this means that a Download folder will change to a Music folder if you grab a few MP3s.

To fix this, go to 'HCU\Software\ Classes\Local Settings\Software\Microsoft\Windows\Shell', delete the 'Bags' subkey and then create a new Bags key in the same


It's easy to change your PC's registered owner if you know where to look.
About Windows
Windows Vista Ultimate
Please wait for the User Profile Service...
Helpful status messages can explain what's happening as Windows boots up.

location. Create a key called 'AllFolders' beneath Bags, and a key called 'Shell' below that. Click it to open 'HCU\Software\Classes\LocalSettings\Software\Microsoft\Windows\Shell\Bags\AllFolders\Shell'.

Right-click the right-hand pane, choose 'New > String Value' and call this 'FolderType'. Then double-click FolderType and set its value to 'NotSpecified'. You'll still be able to change the folder type, but Vista will no longer assign one. (See steps 10 to 20 at **www.tinyurl.com/ywbqeu** if you need more help.)

7 EASY ENCRYPTION

Some versions of Windows have always allowed you to encrypt files, but it's an awkward process; you must right-click the file, select 'Properties', click the 'Advanced' button, check 'Encrypt contents to secure data' and then press 'OK' twice. For a simpler alternative, go to 'HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\Advanced', create a new DWORD called 'EncryptionContextMenu' and set it to 1. Now you can just right-click a file and select 'Encrypt'.

8 ACCESS FOLDERS FAST

Get speedy access to any folder by pinning it to the Start menu. Run REGEDIT, go to 'HKCR\Folder\shellex\ContextMenu Handlers', right-click 'ContextMenu Handlers' and click 'New > Key'. Type '{a2a9545d-a0c2-42b4-9708-a0b2badd77c8}' (as ever, without quotation marks) and press Enter.

Now hold down Shift, right-click a folder and select 'Pin to Start Menu'.

9 SPEED UP COPY TIMES

Vista gives a high priority to your soundcard, so you should get glitch-free audio no matter what you're doing. This can cause slower network copy speeds, however. To tweak this, browse to 'HKLM\SOFTWARE\Microsoft\WindowsNT\CurrentVersion\Multimedia\SystemProfile'. Try setting 'NetworkThrottlingIndex' to more than 10-50 or 60 should be effective — then reboot and test your network speeds again. Read more at **http://tinyurl.com/bdtt6a**.

10 FIX THE DRIVE LISTING

If Explorer no longer lists your DVD drive (or thinks that it's a DVD-ROM and can't burn discs), go to 'HKLM\System\CurrentControlSet\Control\Class\{4D36E965-E325-11CE-BFC1-08002BE10318}' and delete the 'UpperFilters' or 'LowerFilters' settings. This usually works, but it may break whatever application caused the problem in the first place. If a program stops working, check to see if it has an update, then reinstall it.

11 ACCESS DISPLAY SETTINGS QUICKLY

Right-click the desktop in Windows Vista and you can't directly access the display settings. Windows 7 will fix this, but in the meantime go to 'HKCR\Directory\Background\Shell', right-click 'Shell', select 'New > Key' and call it 'Display Settings'. Double-click '(Default)' in the right-hand pane and enter 'Display Settings' in the Value Data box.

Now right-click Display Settings in the left-hand pane, select 'New > Key' again and call this key 'command'. Double-click this new key's (Default) value and enter this text: 'rundll32 shell32.dll,Control_RunDLL DESK.CPL,@0,3'. (That's a zero following the @ sign, and take care to use the right cases.) Click 'OK' and right-click the desktop to see the new Display Settings option.

12 MULTIPLE LIVE MESSENGER LOG-INS

By default, Windows Live Messenger only lets you log into one account at a time. To rectify this situation, go to 'HKLM\Software\Microsoft\Windows Live\Messenger', create a DWORD value called 'Multiple Instances' and set it to 1. Delete the value to restore things to the way they were beforehand.

13 CLEAN THE MENUS

You've uninstalled an application, but it's left you a gift: several now-useless right-click context menu entries. To fix this, go to 'HKCR*' and 'HKCR\Directory'. Expand the shell, then the 'shellex\ContextMenuHandlers' keys and look for any keys beneath these that relate to your unwanted command. On our PC, the key 'HKCR*\shellex\ContextMenuHandlers\7-Zip' links to the 7-Zip context menu, for instance, so to get rid of that we would right-click the 7-Zip part in the left-hand pane and click 'Delete'. But be careful — only delete a key if you're really sure it's the right one.

14 SPEED UP BACKUPS

Windows XP's NTBACKUP improves its performance by maintaining a list of system files it knows you won't want to back up (such as the paging file). Add your own files and folders that you're not bothered about and you'll get even better results. View the list at 'HKLM\SYSTEM\CurrentControlSet\Control\BackupRestore\FilesNotToBackup'.

DO THIS... MAKE YOUR OWN TWEAKS

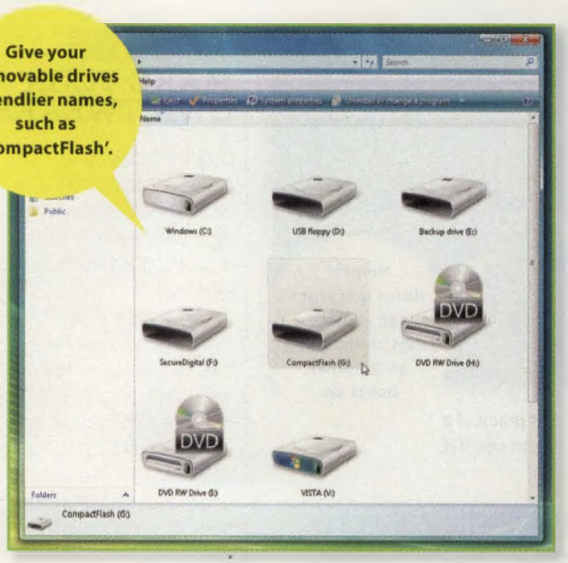
Registry tweaking isn't just about adjusting a pre-existing Windows or application switch. There are also opportunities to get creative.

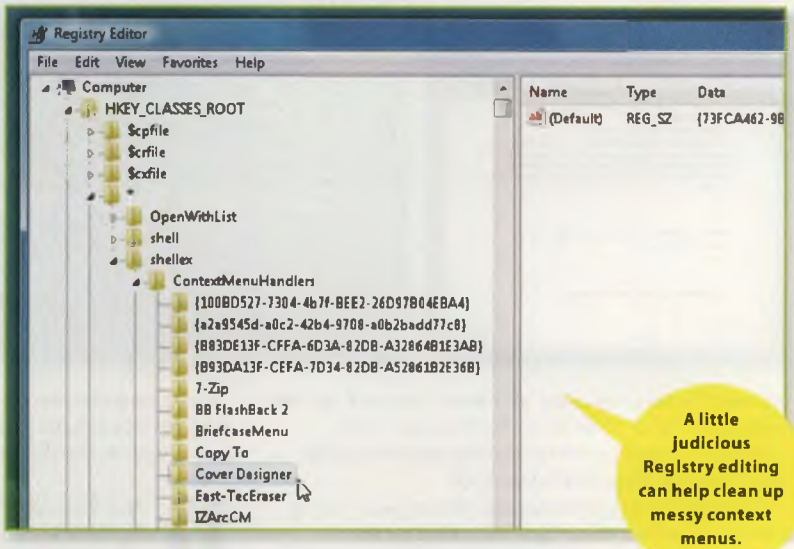
Suppose you know that the Windows Vista Aero interface can be turned on with the command 'Rundll32 dwmApi #102' and off by using 'Rundll32 dwmApi #104'. You could use these commands to create desktop shortcuts that would turn Aero on and off at will. But if you understand the Registry, you'll have the option to add 'Aero On' and 'Aero Off' to the desktop's right-click menu instead. That's a much more convenient solution.

Go to 'HKCR\Directory\Background\Shell'. Create a new key called 'Aero Off' and another key below that called 'command' ('HKCR\Directory\Background\Shell\Aero Off\command'). Set the value of the command key to 'Rundll32 dwmApi #104' (less the quotes).

Return to 'HKCR\Directory\Background\Shell', create a key called 'Aero On' and another key below that called 'command'. Give this one the value 'Rundll32 dwmApi #102' (without the quotes).

Now right-click the desktop and try turning Aero off and back on again. If you add other commands as you discover them, you'll build a custom right-click context menu with easy access to the features that you often need.





15 CHANGE THE DEFAULT INSTALLATION FOLDER

Most installations default to the Program Files folder, but if you want to point this elsewhere, navigate to 'HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion', change the 'ProgramFilesDir' entry to point at your chosen folder and reboot.

16 RENAME DRIVES

Add a memory card reader to a PC and Explorer will often cram the Computer folder with similar-sounding drive names ('Removable Drive D:', 'Removable Drive E:' and so on), making it difficult to tell them apart. But it doesn't have to be that way. If drive G: is a CompactFlash slot, say, then a few Registry tweaks can change it to read 'CompactFlash (G:)', making things much clearer. Start at 'HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer' and create a key called 'DriveIcons'. Within that, create a key with the drive letter ('G' in this example), and within that, create a new key called 'DefaultLabel'. Double-click this key's (Default) value entry, give it a name like 'CompactFlash' and click 'OK'. Restart Explorer or press F5 to see the change.

17 WIPE THE PAGE FILE

Windows stores memory pages in its paging file as you work. That's fine unless an intruder gets access to your system. If so, they may then be able to browse the paging file and extract confidential information. To avoid this, go to 'HKLM\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management', set the 'ClearPageFile AtShutdown' value to 1 and reboot. Windows will now wipe the page file every time it shuts down, lengthening the process but increasing your security.

18 CRASH ON CUE

Blue-screen crashes are usually bad news, but occasionally you might want to initiate one yourself. You might need to test Windows' error reporting, for example. There's a Registry trick that can help achieve this. Go to 'HKLM\SYSTEM\CurrentControlSet\Services\i8042prt\Parameters', create a DWORD called 'CrashOnCtrlScroll' and set it to 1. Reboot your computer, and to crash it just hold down the right Ctrl and press Scroll Lock twice. Use this sparingly: it's a crash like any other, and there's a chance of hard drive corruption. To be safe, delete the CrashOnCtrlScroll value when you're done.

19 SAVE CPU TIME

The average PC has several programs wanting to use the processor at any one time, and so Windows allocates each a period of CPU time — a 'quantum' — before moving to the next. By default this is very short, which makes for a responsive PC, but it sometimes means that Windows wastes time just switching between processes. The solution? You can try what Windows Server does: set up your system to use a long quantum. Set 'HKLM\SYSTEM\CurrentControlSet\Control\PriorityControl\Win32PrioritySeparation' to 16 (hex). Longer quantums mean fewer switches between programs and so less wasted time. It can push some programs too far, though, and you might begin to notice games lagging or video playback becoming less smooth. If you spot any problems, just restore the original Win32PrioritySeparation value (probably 26 hex).

20 DISABLE AUTORUN

Windows' AutoRun feature is a potential security risk because it automatically runs code when you connect removable devices to your PC. If you can put up with the inconvenience of doing things manually then it's safest to disable it. On some systems, this can only be done from the Registry.

To do so, go to 'HKLM\SOFTWARE\Microsoft\Windows NT\CurrentVersion\IniFileMapping' and create a key called 'Autorun.inf'. Next, double-click the new key's (Default) value and enter the new value '@SYS:DoesNotExist'.

Now delete the Registry key 'HKCU\Software\Microsoft\Windows\CurrentVersion\Explorer\MountPoints2'. Windows now won't automatically run any code on CDs, DVDs or removable drives; you will have to manually launch it.

FACT...

Sometimes the Registry gets so corrupted that you can't run REGEDIT to put it right. Oops. Fortunately, the command line reg.exe tool can still add, edit and delete Registry keys. Type 'REG /?' for help and information on exactly how the tool works.

FACT...

Each section of the Registry is stored in a separate file on your hard drive. Check 'HKLM\SYSTEM\CurrentControlSet\Control\hivelist' to see where they're located.

DEVELOPING

Build web apps with Silverlight

Building cross-platform, cross-browser software just got easier for .NET programmers, says **Richard Costall**.

WHAT YOU'LL NEED

MICROSOFT VISUAL STUDIO WEB DEVELOPER (SP1)
Download it for free from the Microsoft web site (*www.microsoft.com/express/vwd*).

MICROSOFT SILVERLIGHT TOOLS
This add-on includes the Silverlight SKD and the Silverlight Developer Runtime. Download it from *www.microsoft.com/silverlight/resources/tools.aspx*.

EXPRESSION BLEND 2 SP1 (OPTIONAL)
Allows use of Silverlight 2 design features such as font embedding.

Silverlight, Microsoft's Rich Internet/Interactive Application (RIA) technology, allows you to create great applications and host them in a web page. There's no need to worry about HTML, CSS, JavaScript and browser discrepancies. For this tutorial, we'll take a look at a simple block-based puzzle game and highlight some of the core features of Silverlight 2, including layout, animations and data binding.

The Silverlight framework runs as a plug-in within the browser on the client's machine. Version 1.0 of Silverlight used JavaScript as the code-behind language and focused primarily on media applications and subtle animations. Silverlight 2, released in October 2008, uses a cut-down install of the version 3.5 .NET framework. This means that any developers who've used VB.NET, C# and dynamic languages such as Python and Ruby can build Silverlight applications without having to learn a new language.

The idea of our game is to clear the blocks from the screen by clicking on them. Like most games, there's a catch: you lose a life if you click on a block that has no adjacent blocks of the same colour. The points you score when you click on a block are multiplied by the total number of blocks that will be removed. The aim is to group as many blocks as possible together before moving them.

The application is made up of three parts: the Silverlight page that renders the game screen, a user control to render an individual block and a 'BlockManager' class that takes care of all the plumbing code. The BlockManager class defines the 15 x 15 grid as a generic collection of our BlockUI objects. By using generics, we can safely assume that the items in the list are always going to be BlockUI objects or null. The code below defines 'm_BlockRow' as a list of a list of strongly typed BlockUI items. Why not use a two-dimensional array? This would have been easy, except for the fact that we want to remove entire columns from anywhere in the collection as they become empty. As long as the recursive matching algorithm checks for list sizes, then our code will always work. Enter the following:

```
private List<List<BlockUI>> m_ BlockRow = new
List<List<BlockUI>>();
```

Take a look at the full code at **apcmag.com/workshops**, and particularly the recursive algorithm that it uses. Here, we're going to focus more specifically on the Silverlight aspects of our project.

SILVERLIGHT BASICS

Each user interface page of a Silverlight application is made up of two files, defined as a partial class, an XAML (Extensible Application Markup Language) file and the code-behind file. XAML is a declarative XML language. It not only allows developers to build and design the layout, but it can also be created by developers and designers using Microsoft's Expression Blend product. Assets for use in the Silverlight application can be independently created and exported from Microsoft Expression Design Tool. Anything you can create in XAML you can also create in code, should you wish to.

All Silverlight user interface pages start with a root layout container that can either be a Grid or a Canvas control. The container you'd choose for your layout depends on the application you are building. For the majority of applications, the Grid — our default container — will be preferable. This provides a basic layout of rows and columns, not unlike HTML tables. In the Canvas control, by contrast, all child elements are laid out using their 'Top' and 'Left' properties to determine their position. The layout is extremely flexible, and controls can be infinitely nested.

Our game will use the Grid as its root layout control. The Grid is comprised of two rows and two columns (as shown below). Any row or column defined with the 'Auto' value will only take as much space as its child controls require. Adding an asterisk lets it take as much space as allowed. You can also use fixed values in these spaces if you need to use more precise measurements:

```
<Grid x:Name="LayoutRoot" Width="720"
Height="587.5">
<Grid.Background>
<LinearGradientBrush EndPoint="0.5,1"
StartPoint="0.5,0">
<GradientStop Color="#FF28425F"/>
<GradientStop Color="#FF207ADF" Offset="1"/>
</LinearGradientBrush>
```

BINDING CODE

There are three types of data binding in Silverlight: OneTime, OneWay and TwoWay. OneTime is a once-only binding, OneWay will update the target control whenever the source object property changes, and TwoWay will update the source control when the target control changes. A TextBox input control would have its binding set to TwoWay.

WEB APPLICATIONS

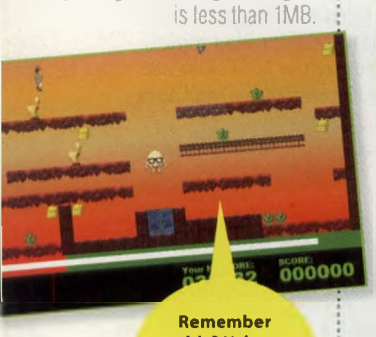
Silverlight is a subset of Windows Presentation Foundation (WPF), Microsoft's next-generation presentation technology. Once you've learned how to use Silverlight, you can reuse your newfound skills and start building Smart Client applications in WPF.

STORYBOARD HACKS

Want to create a Silverlight game loop? One option is to use a storyboard with a time duration set to zero. You can then start the storyboard when the page loads, and then use the storyboard's 'Completed' event to start the storyboard all over again when it gets to the end.

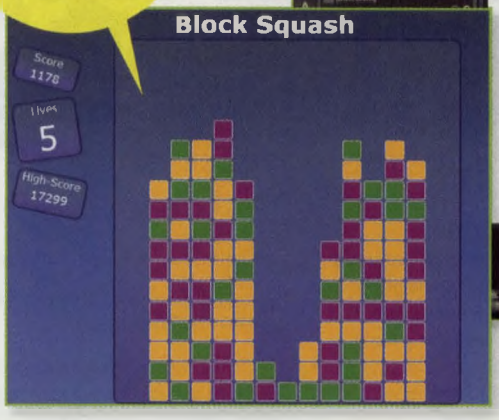
DO THIS... THE CLASSICS IN SILVERLIGHT

An example of Silverlight as a gaming platform can be seen at *www.nxtgenug.net*. This Silverlight game is a recreation of the 1983 ZX Spectrum title. Its game engine — which is written in C# — is compatible with both the XNA and Silverlight versions of the framework, though there are separate user interfaces for Silverlight and XNA. The game uses the Canvas control for absolute positioning of all its elements. Collision detection was an issue, as Silverlight lacks any support for pixel-level collision detection. This was solved with frame-by-frame pixel binary maps. First, the engine does boundary collision detection. If a collision has occurred, it goes on to check at pixel level for a collision. On XNA, with access to hardware acceleration, each frame is cleared and redrawn. For the Silverlight solution, which doesn't benefit from the GPU acceleration, the engine provides a list of the objects which have moved and need to be re-rendered. The full game package, including all images, is less than 1MB.

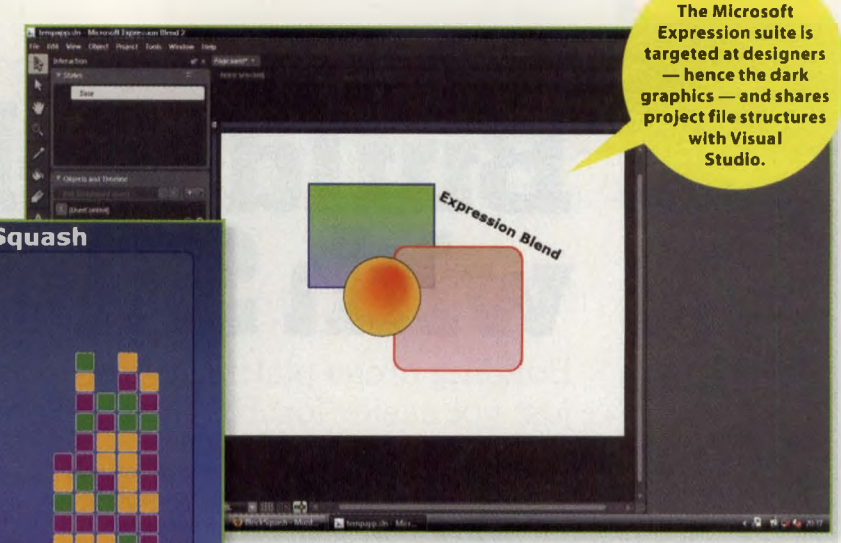


Remember this? Using Silverlight or XML, you can recreate ancient arcade hits.

Even though no browser-specific code is required, the game looks identical in Internet Explorer and Firefox — except for the randomly generated blocks.



The Microsoft Expression suite is targeted at designers — hence the dark graphics — and shares project file structures with Visual Studio.




```
</Grid.Background>
<Grid.RowDefinitions>
<RowDefinition Height="auto"/>
<RowDefinition Height="*"/>
</Grid.RowDefinitions>
<Grid.ColumnDefinitions>
<ColumnDefinition Width="auto"/> <ColumnDefinition Width="*"/> </Grid.ColumnDefinitions>
<!-- Define main content here -->
</Grid>
```

Another layout control we'll be using predominantly in our game is the 'StackPanel', which provides us with the ability to stack child controls. By setting the orientation to 'vertical' and alignment to 'bottom', we can get the effect of our blocks being stacked from the bottom up, as seen in the screenshot. Our page contains a single StackPanel ('spmain'), which is populated with 15 child StackPanels. It's these child StackPanels that contain the blocks. When a child StackPanel has no blocks in it, the application removes it from the layout, moving the other StackPanels inwards:

```
<StackPanel x:Name="spmain" Orientation="Horizontal" VerticalAlignment="Bottom" HorizontalAlignment="Center" />
```

We also need to show the score and level data on-screen. Traditionally this would be achieved by writing some code to hook up the data value to the screen item. However, there is another way: data binding.

A BIT OF A BIND

Data binding is the process of connecting an object or data value to a user interface element. All the 'binding' plumbing work is handled for you by the Silverlight framework. What we need is for the 'TextBlock' control, which displays the score, to immediately reflect the change when the score changes in the BlockManager class. To see how this works, let's have a look at the data binding syntax for the score TextBlock in the Page XAML:

```
<TextBlock TextAlignment="Center" Height="54.266" Width="81.51" Foreground="#FFFCFAFA" Text="{Binding Score}" VerticalAlignment="Top" HorizontalAlignment="Center" FontSize="18"
FontFamily="Verdana"/>
```

The binding syntax within the 'Text' attribute has no notion of what it's binding to; just that there will be a property on that object called 'Score'. Now all we need to do is tell our game page that the context for this binding is going to be our BlockManager instance:

```
this.DataContext = m_bm;
```

It may seem strange that we're setting the context at a very high level and not just setting it against the Score TextBlock. The key here is that all child elements in the Silverlight visual tree take the data context from their parent, so by setting the context at the 'Page' level, all children are now aware of this object. This lets us implement the other high score and lives bindings without any extra code.

The last change we need to make is to notify our page (via the framework) when any of our score and lives values change. This is achieved by implementing the 'INotifyPropertyChanged' interface on each of our properties within our BlockManager class:

```
public int Score {
get { return m_Score; }
set {
m_Score = value;
PropertyValueChanged("Score");
}
}
```

INotifyPropertyChanged has a single event — 'PropertyChanged' — declared against it, and it takes the name of the changed property:

```
#region INotifyPropertyChanged Members
public event PropertyChangedEventHandler PropertyChanged;
```

```
#endregion
public void PropertyValueChanged(string property)
{
if (PropertyChanged != null)
{
this.PropertyChanged(this, new PropertyChangedEventArg
s(property))
;
}
}
```

We now have an automatically updating UI. If a designer wanted to change the UI from a TextBlock showing the lives to a countdown gauge (or anything else), they wouldn't have to change any code as we've not tied the property value to the control instance.

CREATE VISUAL FEEDBACK

We want to give the user some visual feedback when they move the mouse over a block. We can achieve this in a couple of ways. First, to denote the item as clickable, the mouse pointer becomes a hand icon, which is declared in the BlockUI XAML mark-up file.

No code is required to implement this or even the restoration of the mouse icon to an arrow, as it's all handled for us by the Silverlight framework:

```
<Grid x:Name="LayoutRoot" Cursor="Hand">
<Rectangle x:Name="rectBlock" Height="28"
Fill="Moccasin" Width="28" Stroke="#FFF4F0F0"
RadiusX="3" RadiusY="3" RenderTransformOrigin="0.5,0.
5">
<Rectangle.RenderTransform>
<TransformGroup>
<RotateTransform/>
</TransformGroup>
</Rectangle.RenderTransform>
</Rectangle>
</Grid>
```

We can also enhance the 'mouse over' experience with some animations by using storyboards. A storyboard is a collection of one or many changes to properties of the objects in the mark-up. For our block, we want it to 'jiggle' when the mouse moves over it.

We can achieve this by changing the 'Angle' property of 'Rotate Transform' by 15 degrees each way at 100-millisecond intervals. The storyboard can also reverse its animations and then continue to animate indefinitely by setting the 'AutoReverse' and 'Repeat Behavior' properties.

Don't be too scared by the complexity of the mark-up, as you'll generally be using Expression Blend to create your animations. The Storyboard is declared in the Resources section of our Block User control, and we use the Name attribute (sbmo) to identify it:

```
<UserControl.Resources>
```

The Silverlight home page has tutorials and busy forums.

```
<Storyboard x:Name="sbmo" AutoReverse="True" Repeat
Behavior="Forever">
<DoubleAnimationUsingKeyFrames BeginTime="00:00:00"
Storyboard. TargetName="rectBlock" Storyboard.
TargetProperty=" (UIElement.RenderTransform).
(TransformGroup.Children)[0]. (RotateTransform.Angle)">
<SplineDoubleKeyFrame KeyTime="00:00:00" Value="0"/>
<SplineDoubleKeyFrame KeyTime="00:00:00.100" Value="-
15.000"/> <SplineDoubleKeyFrame
KeyTime="00:00:00.200" Value="15.000"/>
</
DoubleAnimationUsingKeyFrames>
</Storyboard>
</UserControl.Resources>
```

To start and stop our storyboard, we can write some code that will handle the 'MouseEnter' and 'MouseLeave' events in our control as well as call the 'Begin()' and 'Stop()' methods on the Storyboard instance shown below:

```
void BlockUI_Loaded(object sender, RoutedEventArgs e)
{
this.MouseEnter += new MouseEventHandler(BlockUI_
MouseEnter);
this.MouseLeave += new MouseEventHandler(BlockUI_
MouseLeave);
}
void BlockUI_MouseLeave(object sender, MouseEventArgs
e)
{
sbmo.Stop();
}
void BlockUI_MouseEnter(object sender, MouseEventArgs
e)
{
sbmo.Begin();
}
```

While there's a lot of code in this project, little of it is particularly complicated. This whole game only took about two hours to write, with most of its code in the BlockManager class; but it successfully demonstrates the power and flexibility of the Silverlight framework. Next issue, we'll add a few flashier features.

MORE ABOUT... SILVERLIGHT'S FLEXIBILITY

Silverlight offers considerable flexibility. NBC, in conjunction with Microsoft, built a Silverlight media application that delivered over 2,000 hours of live streaming video coverage of the 2008 Beijing Olympics. The app delivered a richer experience than you'd get on your TV, with high-quality coverage, commentary and player statistics. By the end of the Olympics, some 50 million unique visitors had accessed the site and watched on average 27 minutes of footage from the 5,000 video clips available. Imagine the improvement to the user experience with line-of-business (LoB) apps running in the browser. Silverlight 2 comes with great networking support, local storage and a set of controls on which to build LoB applications. Microsoft has also recently announced plans for an additional set of around 100 controls.

masterclass
STEP-BY-STEP TRAINING

IN THIS SERIES

Learn how to network every digital device in your home, everywhere from the home theatre to the bedroom. This is the ultimate home-networking tutorial on how to turn your castle into a 21st-Century digital paradise.

THE CONNECTED GUY

David Neiger will be building the connected house in a real home and will be filling regular columns and updating the *APC* web site as he goes along. David is a qualified engineer with many years of networking, IT implementation, consulting and project management experience.

WHAT'S NEXT?

PART 6
JUNE '09
STREAMING YOUR COMPUTER CONTENT TO YOUR TV

PART 5 CREATE THE ULTIMATE CONNECTED HOME

Getting audio connections right

Now that we have high-quality video, we want high-quality sound.

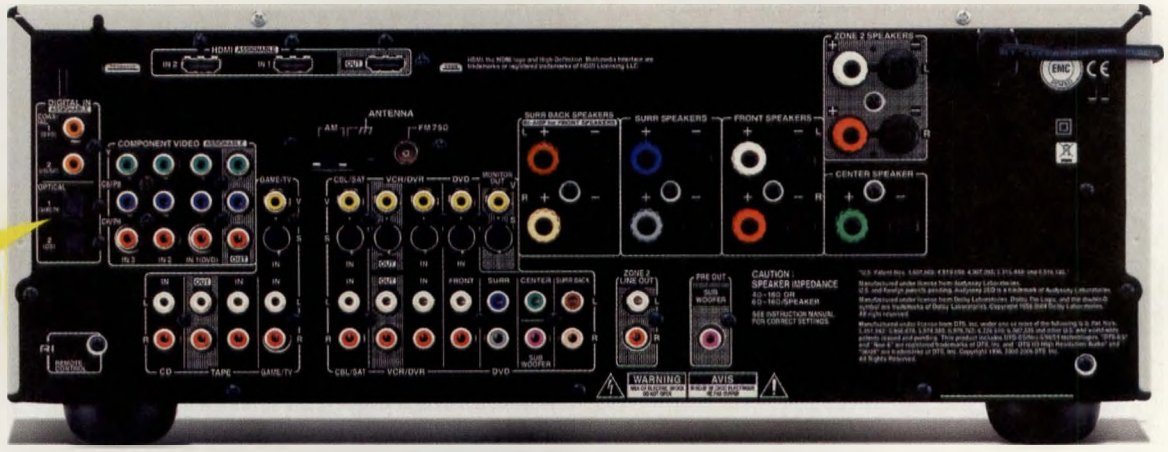
When I learnt to shoot video, it was continuously emphasised that sound is often more important than the video. Whilst people will put up with mediocre-quality video, if the sound is noisy, distorted or unnatural, viewers will turn off very quickly. Some video experts will even go so far as to say that video is merely pictures to accompany the soundtrack.

Now that we have the high-definition picture correct (see last month's tutorial), it is important to work on getting the sound right.

Whilst you could just use the speakers built into your television, you would not do this because, bluntly, most television speakers are lousy. They lack good wall-shaking bass response, are often light-on in the treble department and generally sound as natural as a tin can connected by fishing line.

Whilst some television sets offer SRS or Dolby surround sound, don't be fooled. It is not possible to experience true 360° surround sound from two speakers and, unless you have a particularly large television with the speakers more than a 1.5 metres apart, it is not possible to even experience good stereo sound. For high-quality audio you need to invest in a proper surround sound system.

How much you are willing to spend depends upon how good your hearing is and how much you value your audio. The sky is the limit, with budget systems available for under $200 through to audiophile systems (that require their own dedicated listening room) costing well over $20,000. If you spent your life working on a construction site (without earplugs), then to be honest you probably won't hear much difference between a system costing under $1,000 or one costing over $5,000. On the other



We can see how being faced with this many connection points can be a daunting challenge. Read on and we'll make the whole process simpler.

Missed a tutorial?
Visit www.magshop.com.au for back issues of APC

hand, if you enjoy good-quality sound then you will derive many years of pleasure from a high-end quality system.

SOUND SYSTEM PRICE RANGES

For under $300 you can pick up a cheap surround-sound-in-a box systems from budget retailers. Don't expect miracles because you are paying less for a whole system than some people spend on a single speaker, but even these budget systems are a significant improvement over the built-in speakers in your television (which are probably $10 speakers if you are lucky). These affordable systems are generally 5.1 channels, which means that you have three speakers in the front (left, centre and right), two satellite surround speakers (left rear and right rear) and a bass subwoofer (the .1) which provides the bass. These speakers are likely to only have a single driver (speaker) to attempt to reproduce all frequencies and are likely to be housed in plastic enclosures.

As you spend more money you get surround sound systems from leading manufacturers such as Sony, Panasonic, LG or Samsung. These systems include better-quality speakers (often with several drivers) which give you more natural sound and improved connectivity such as multiple HDMI inputs, optical and coax digital audio inputs and several analogue inputs for connecting older equipment such as tape decks, VCRs and older camcorders. Some of these systems have adjustable cross-overs (to allow you to balance the sound) and wooden or metal speaker enclosures.

Moving up the range you start to see additional features such as wireless satellite speakers, which use Bluetooth rather than cables to send the audio from the amplifier to the speakers. Some of the more advanced surround amplifiers also include video processing to improve the picture from VCRs or upscale DVD video to 1080p high definition. Speakers are better quality too, although you would need to have good hearing and an appreciation of fine audio to hear the difference.

The other feature you get with some of the more advanced systems is 7.1 audio. This gives you an additional two channels of discrete audio (surround left centre and surround right centre) which gives you an even more realistic sound field (like in the theatre).

MORE ABOUT MASTERCLASS PARTNERS

The products and services featured in our Masterclasses are picked because we believe they are among the best available. We do not have a specific advertising relationship with the providers .

• The Sony Z series HDTV used in this Masterclass is the world's first Motionflow 200Hz TV. It smooths out fast-moving imagery, largely removing motion blur suffered by early LCD TVs.

Use the test tones on Digital Video Essentials' *Optimize Your Home Entertainment System* to calibrate your surround sound system.
The advantage of a home theatre system in a box is that everything you need comes in the kit.
DIGITAL VIDEO ESSENTIALS
Optimize Your Home Entertainment System
DVE
SONY
SONY

[IT IS POSSIBLE TO DAMAGE SPEAKERS IF THE AMP DELIVERS TOO MUCH POWER]

MORE ABOUT DIGITAL VIDEO ESSENTIALS

• Digital Video Essentials' *Optimize Your Home Entertainment System* is the classic home theatre TV calibration system used by enthusiasts and professionals. It contains step-by-step instructions on how to get the best possible picture from your HDTV. It's US$19.99 on Amazon.com.

TYPES OF SOUND SYSTEMS

When selecting a home theatre system you can either purchase a home theatre system in a box or shop around for the components (amplifier, speakers, stands, sub-woofer, cables) and assemble a system yourself. The advantage of a home theatre system in a box is that everything you need comes in the kit: amplifier, compatible speakers, speaker stands and even speaker cable.

With the home theatre system in a box you can be sure that everything will work well together, since the manufacturer has matched the speakers to the specifications of the amplifier. Home theatre systems in a box are also generally less expensive than systems assembled from individual components: for instance, Sony's HT-SF2300 Surround Sound system is a classic example of a complete mid-range 5.1-channel audio component home theatre system.

However, if you are prepared to assemble a system yourself you can choose "best of breed" components from specialist manufacturers. This is not for the inexperienced, since you will need to do your research and spend time auditioning the various components.

You will also need to familiarise yourself with audio specifications (such as power output, impedance, cross-over frequencies) to ensure that all of the components work properly together. Mistakes here can be costly as it is possible to damage speakers if the amplifier delivers too much power, or end up with an underperforming system if the amplifier cannot drive the speakers to capacity.

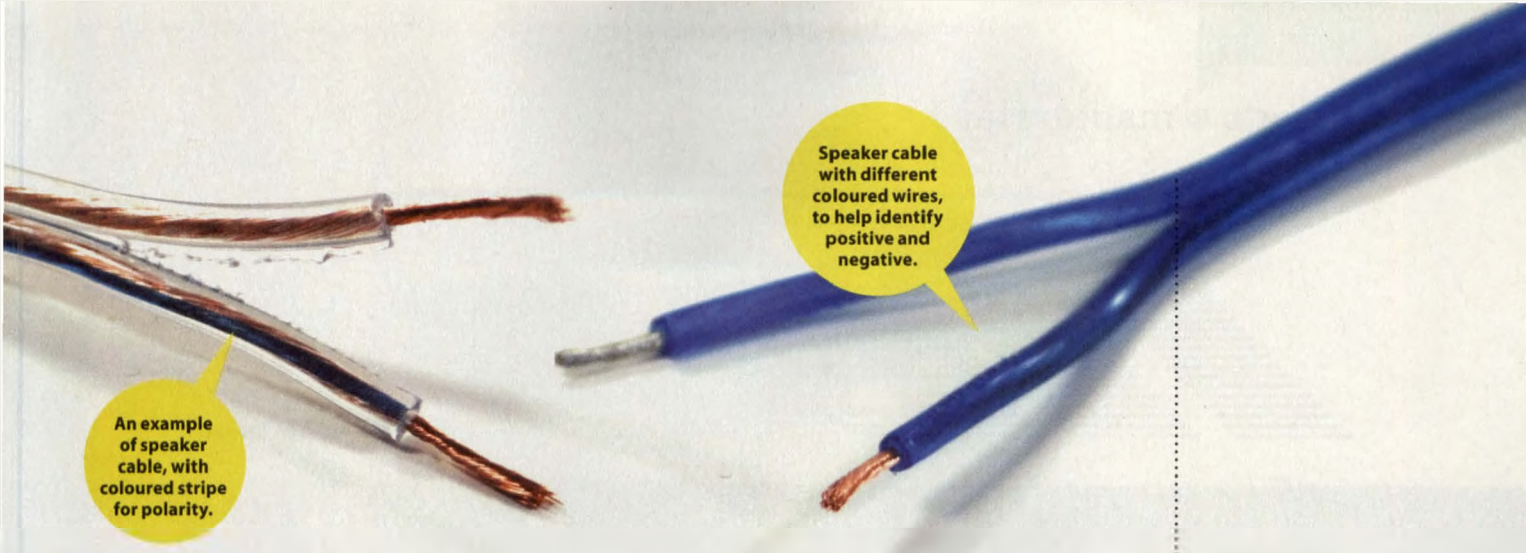
Other technical issues such as impedance mismatch, cross-over mismatch and incompatible subwoofers can also adversely affect sound. Manufacturers of component systems generally assume that they will either be professionally installed or purchased by people who know how to properly configure the surround amplifier, balance the speakers and ensure that the subwoofer cross-over is set properly both on the subwoofer itself and the amplifier.

In the *APC* audio-visual test lab we have assembled a system to allow us to fully test the audio capabilities of the equipment we review. It took several months to find the speakers and amplifier we wanted and then hours to assemble and calibrate the system (even with considerable experience). Whilst the sound is excellent, visually it looks like a collection of components as each individual manufacturer has their own design ideas. We can get away with this in the lab, but you might prefer something more aesthetically pleasing for your lounge room.

Irrespective of whether you choose a home theatre system in a box or decide to assemble your system from best-of-breed components, there are a few things you can do that really improve sound quality.

HARD SURFACES

Have you ever been inside a theatre with hard walls and timber floors? I hope not! Every theatre I have been to has curtains and carpet on the floor and even the walls in


Speaker cable with different coloured wires, to help identify positive and negative.
An example of speaker cable, with coloured stripe for polarity.

order to improve the acoustics.

Sound waves are reflected from hard surfaces such as plaster walls, polished floors, plaster or gyprock roofs and windows. You can hear this for yourself if you listen to music in the bathroom (without any towels). The sound is harsh, echoes and is generally unpleasant. Even hanging a few towels on the door or shower screen can improve the sound. (In fact in the 1950s, record producers would play recordings in the bathroom and rerecord the sound with a microphone to get a fuller sounding reverb effect, which is also why your singing sounds better in the shower.)

If there are too many hard surfaces in your home theatre room, you can "soften" the sound and deaden echoes by simply putting a rug in the centre of the room, hanging curtains from the windows and even placing cushions and other soft furnishings around the room.

It is possible to have sound that is too soft as well. Too many soft furnishing or deep shagpile carpets (in '70s-style houses) can muffle sound, resulting in a loss of sharpness and sound field. This may be a little harder to correct in your home, but replacing deep fluffy carpets, velvet hanging drapes and other soft furnishings can improve the sound considerably, although some negotiations with your other half or flatmates may be necessary.

SPEAKER PLACEMENT

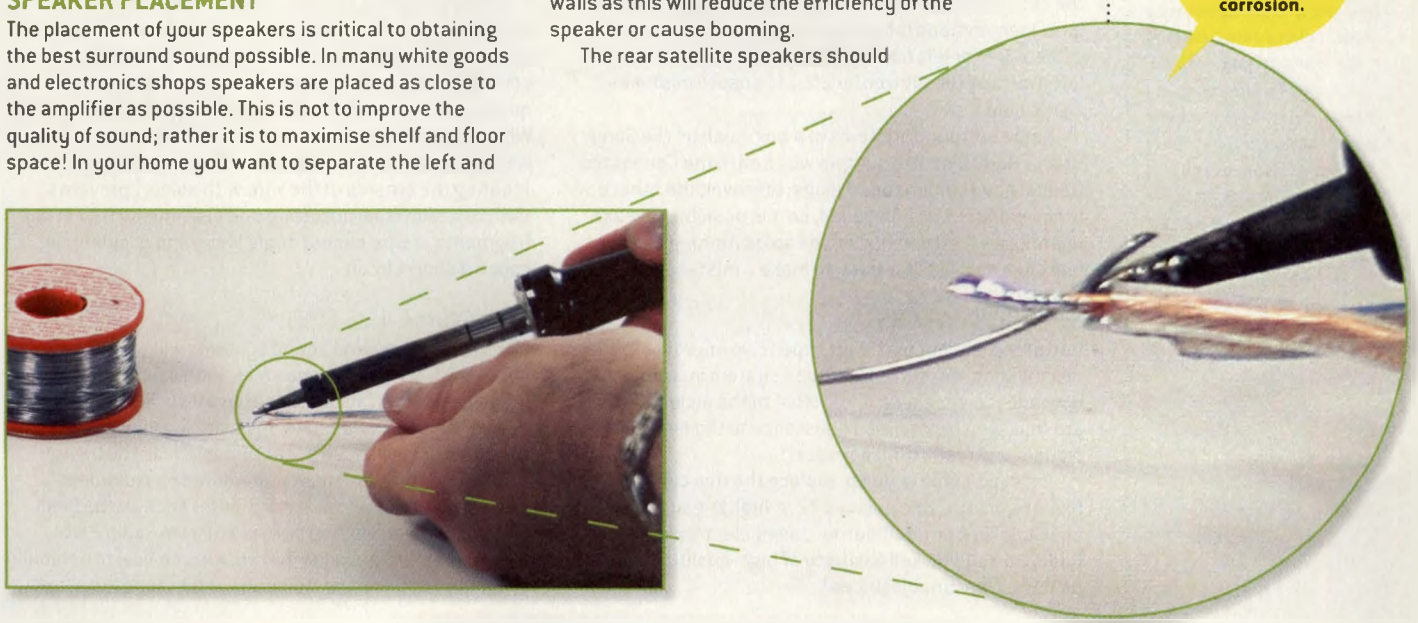
The placement of your speakers is critical to obtaining the best surround sound possible. In many white goods and electronics shops speakers are placed as close to the amplifier as possible. This is not to improve the quality of sound; rather it is to maximise shelf and floor space! In your home you want to separate the left and right speakers as much as practical, to give a wide stereo field. As a minimum, the left and right speakers should be 1.5 metres apart for the full stereo effect. You also need to match your stereo field to the size of your television. Nothing sounds more unnatural than having actor's voices coming from outside of the television because you have a nice large stereo field with a small 32in television!

As a guide, place your left and right speakers about 50cm from the edge of your television and place the centre speaker preferably directly above or just below the centre of the screen. Don't place the centre speaker behind the television since the television will block the sound. The human ear cannot accurately determine where deep bass sounds from the subwoofer are coming from (as they are mainly felt rather than heard) so you can place the subwoofer in a convenient place. However if the subwoofer is placed directly on a hard surface (such as a table, inside a cabinet or on a polished floor), the hard surface will act as a sound-board and over-emphasis the bass. This can be corrected with your amplifier or speaker controls. Placing the subwoofer on soft furnishings (such as a thick rug) will de-emphasise and muffle the bass. Most sub-woofers have two holes in the enclosure; one is for the driver (speaker) itself and the other is a vent for the driver. These holes should not be covered or placed next to walls as this will reduce the efficiency of the speaker or cause booming.

The rear satellite speakers should

MORE ABOUT TRUE 7.1

In order to hear true 7.1 channel audio you need a compatible Blu-ray player and programs (such as movies and concerts) that are encoded in Dolby True-HD or DTS-HD Master Audio. Many older films, DVDs and even Super Audio CDs are only recorded in 5.1 surround, so there is little benefit in going to 7.1 surround if you mainly watch DVDs or listen to music.



MORE ABOUT ATTENUATION

Since all wire attenuates (reduces) the signal with distance, you should keep speaker wires as short as possible (leaving just enough leftover cable to allow you to move speakers a little if necessary). If using pre-made speaker cables, consider trimming any excess wire (and tinning the ends); however, if you don't want to trim the cables (because you might move house) then make sure that the cable is fully uncoiled. Leaving coils of wire can create induction loops that will affect the quality of sound.

ideally be placed on the back wall opposite the corresponding front speakers. If you are installing 7.1 surround speakers, the centre satellite speakers should be positioned in the middle of the room parallel to the couch or armchairs.

It may seem obvious, but it is important to connect the correct speaker to the correct output on the amplifier. You may quickly hear if your have reversed the left and right front channels (when sounds move opposite to the action) but reversing the satellite speakers or swapping the centre for one of the side speakers may be harder to pick. I recommend labelling both ends of the speaker cables (L-F for left front, C-F for centre front, L-R for left rear, S-W for subwoofer etc.) to ensure mistakes aren't made.

Some surround systems in a box, such as the Sony Bravia Home Theatre system we used in the Connected House, have colour-coded plugs; however, the other end of the cable is still unlabelled, so it is possible to make mistakes. When you have five cables running out the back of a cabinet, it is easy to make a mistake!

SPEAKER CABLES

One of the easiest and least expensive improvements you can make to any surround sound system in a box is to upgrade the speaker cables. Most of the included cables are thin, which increases resistance to the electrical signals and results in poor sound.

If it is possible to do so, replace the thin cables with higher-quality cable such as 22 or higher-gauge cable. We used cables from Melbourne-based electronics supplier Radio Parts (who sell a variety of high-quality speaker cables at reasonable prices).

If you are using your own speaker cables, it is important to get the polarity correct. Some cables, such as the Radio Parts cable, use different coloured wires; you can use the copper coloured wire to connect to the positive terminal and the silver coloured wire to connect to the negative terminal. Other cable manufacturers place a coloured or black stripe on the outside of the cable. It doesn't matter whether you assign the stripe to the positive or negative terminal, as long as you are consistent.

If you can use a soldering iron you should also tin the ends of the cable. Copper wiring (used in most speaker cables) is a good conductor of electricity but corrodes easily when exposed to air (which is why better-quality speaker cable is made from oxygen-free copper). When the cable corrodes it does not conduct electricity well and can introduce distortion. Tinning the wire (coating the outside of the wire with solder) prevents this corrosion from occurring and also means that stray fragments of wire cannot come loose and accidentally cause a short circuit.

BALANCING THE SPEAKERS

Whilst most surround sound systems will work straight out of the box, and some such as Sony's Bravia home theatre systems include an automatic calibration mode, you will obtain best results by balancing your speakers. To do this you will need a test DVD (such as the Digital Video Essentials *Optimize Your Home Entertainment System*) and a sound pressure meter such as the Doss SPL1588, which we also purchased from Radio Parts.

The test DVD includes instructions on how to optimally place your speakers and a series of test tones to allow

The Doss sound pressure meter will help you to accurately set the speaker volumes on your surround sound system.

Some surround sound amplifiers, such as the Sony Bravia Home Theatre System, use colour coded output jacks.

you to set the individual volume of each speaker to make them uniform. Enter the setup mode of your surround amplifier and choose your room size. Some amplifiers also give you the option to set the distance of the speaker from your listening position. This is important to ensure that sound from each of the channels arrives at your ears at the same time.

The next step is to use the sound pressure meter to accurately measure the volume of sound from each speaker. You may be surprised that even identical speakers from the same manufacturer can produce quite different volumes depending upon their placement. From the amplifier setup menu, adjust the volume of each speaker until the meter shows the same sound pressure level when monitoring the test tones from each channel. Whilst calibrating your system you should also check that each of the speakers is wired up correctly and the sound is coming from the correct speaker (obvious but important!).

The next step is to adjust the cross-over frequency of your subwoofer.

As you listen to the bass tones (setting your sound pressure meter to calibrate low frequency sounds) you should obtain nearly identical readings for each tone. If you find that the bass cuts off too low (some mid-tones are missing), increase the cross-over frequency until the volumes of the tones are more even. Conversely, if you hear booming (or the sound pressure meter shows increased volume for the mid-tones), decrease the cross-over frequency so that your main speakers and subwoofer are trying to reproduce the same frequencies.

It may be tedious, but the hours of work you put in to calibrate and adjust your sound will result in better audio fidelity and more natural sound.

MORE ABOUT POLARITY

It is also important to connect the polarity of the speakers correctly. On the back of each speaker is a red and black connector corresponding to the positive and negative inputs. Reversing the inputs will still give you sound, but it will be out of phase and diminish the overall performance of the system.

It's a (cable) jungle out there, so make sure you properly label your speaker cables before connecting them.

IN THIS SERIES

Did you build a web site and nobody came? **Ash Nallawalla** explains why and how you can attract the right visitors. This month we will move away from the web site and optimise the so-called social media.

APC EXPERT

ASH NALLAWALLA

Ash manages natural and paid search traffic for some of Australia's largest web sites. He is an internationally acknowledged expert in search marketing, and he previously operated an SEO training business. Recently, he presented two sessions at the WebmasterWorld Conference in Las Vegas, which he has written up at his blog **www.netmagellan.com**. Ash can be contacted at **seo@acpmagazines.net**.

WHAT'S NEXT?

PART 9
JUNE '09
OPTIMISING BLOGS AND CONTENT MANAGEMENT SYSTEMS

PART 8 SEARCH ENGINE OPTIMISATION

Social media optimisation

Last month we discussed how to design a search-engine-friendly (SEF) web site. Now we have to apply the theory.

Social media is a loose term that describes web sites that involve extensive human participation for mutual benefit. This is more of a long-term traffic strategy than obtaining immediate SEO value. The indirect SEO benefit is that if a site is great, then people will blog about it from a page that is crawled. They might also write about it from other pages that are not crawlable.

USER-GENERATED CONTENT (UGC)

As the name implies, getting your web site users to write content for you is wonderful, provided that they stick to the topic at hand, are civil and can write plain English. This implies a logical web structure, such as a forum or Wiki that is split into various topics and has moderators to keep discussions on track. In practice, UGC is not as easy as it sounds.

FORUMS

The most successful forums were established many years ago, so anyone starting a new forum has a difficult but not impossible task ahead. A few business models are suited to a forum that complements the main web site, provided that great care is taken to keep the users and legal department happy.

Until a forum has a large number of users who contribute, newcomers will not feel comfortable writing a post in case nobody replies. Therefore, many new forums employ ghost writers to seed hundreds of posts and follow-

AboutUs
Find!
page
Sign Up!
Log In!
AboutUs Home
Spotlight Articles
Need Help?
What is AboutUs?
more links
Wiki
history
Welcome to AboutUs. We are creating a guide to websites.
Want to learn more about a website?
- Search for it in the Find! bar above.
Know something about a website?
- Edit its AboutUs page to add your knowledge.
Operate a website?
- Promote your site by editing its page or with a SpotlightUs Page.
Ready to get started?
- Create your free account or log in and start editing!
AboutUs
How would a SpotlightUs Page help your site?
click here for details
Page views: 26,341,247
Recent Contributors
Aboutus.com enables user-generated contributions.

RSS is an easy way to share content.
apc
home
news
how-to
forums
Forum home
Forum rules
APC March 09: Win 7 to kill Vista
Jump to forum:
Vista & Windows 7
RSS feed
Email alert
APC Forums > Vista & Windows 7 > APC March 09: Win 7 to kill Vista
DanWarneAPC
21 posts
Posted: 19/02/2009 2:02 PM
The blogosphere loves Windows 7. We put it through its paces to see if it fully addresses Vista's failures. What do you think of Windows 7? Will you skip Vista all together?
permalink
Digg
Slashdot
send to a friend
Me in Oz
68 posts
Posted: 19/02/2009 2:02 PM
Running the beta in VMWare and apart from the eye candy, I can't see much in operational improvements.
I will get it, of course, because I'm a Windows Gaming Whore ;)
permalink
Digg
Slashdot
send to a friend
Haicon
29 posts
Posted: 19/02/2009 3:02 PM
I have tried out the beta in a DELL Optiplex GX 260, Pentium 4 processor with 1GB of memory and 200GB Hard Disk.
As this system is a 32 bit type, I see no problems running the OS on this kind of Processor.
The only concern there will be six variants of the software compared with Apple OS X
NOT SIGNED IN
Anonymous user
Login here
Sign up now!
RSS feeds
Forums: there has to be some give and take.

ups. Once genuine readers begin to participate, the ghost writers can be eased off. By limiting discussions to topics of direct relevance to the business, the user-generated content becomes tasty food for the search engine spiders. Judiciously placed links to the corporate web site in the forum pages will provide a tiny amount of link juice.

Users might not contribute to a forum if the rules are very strict. There has to be some give-and-take. For example, forums attract 'subtle spammers' (distinguished from the blatant ones) who casually drop their own links in the body of their posts. A suitable rule would be to allow a link in a signature file, but not in the body of the post. There isn't any real difference between the two links as far as a search engine is concerned, but this rule will make it hard for the subtle spammer to include new links in subsequent posts. If all links are rendered as 'nofollow', then some users might not contribute.

Forum UGC remains primarily a traffic strategy in spite of the tiny link value it brings because it keeps users coming back to the forum and some of them will visit the corporate site.

WIKIPEDIA

Wikipedia.com is a very authoritative site whose pages are usually at the top of the search results, but has little SEO value because all links are marked 'nofollow'. There is, however, a theory that Google still regards such links as important signals of quality, so you should not hesitate to contribute your site's information if you believe it to be valuable information.

ABOUTUS

AboutUs.com on the other hand enables you to set up a page for any web site; just replace **trainsem.com** with your URL and it will read your site and give you an instant page! Its pages (over 11 million) have been indexed by Google, so it is worth getting a free listing there. You may find that customers might say unkind things there, so keep a close watch on such sites.

RSS FEEDS

Really Simple Syndication (RSS) is a way to share content by building pages in XML and allowing others to subscribe. As you can imagine, this works well for news sites that are updated often. However, there is a great SEO benefit in using RSS/XML in the sense that there is an automated eco-system that you can use to advantage even if you don't have a news site.

Subscribers use a news aggregator or reader to read RSS feeds. Of course, you need humans who are interested in this content, but of equal value are the search engines that can pick up a link through one of the web-based news subscription sites, such as Google Reader, MySpace, My Yahoo! and so on.

LICENSING YOUR CONTENT

Be very careful of the duplicate penalty when you share your content or publish someone else's content. If you are sharing your content, do not give away all of it, or make sure that your publication is picked up by Google before your syndication partners publish it.

Of course, if your business makes more money by selling content to anyone who wants it than from having your pages come up first in the SERPs, then go ahead!

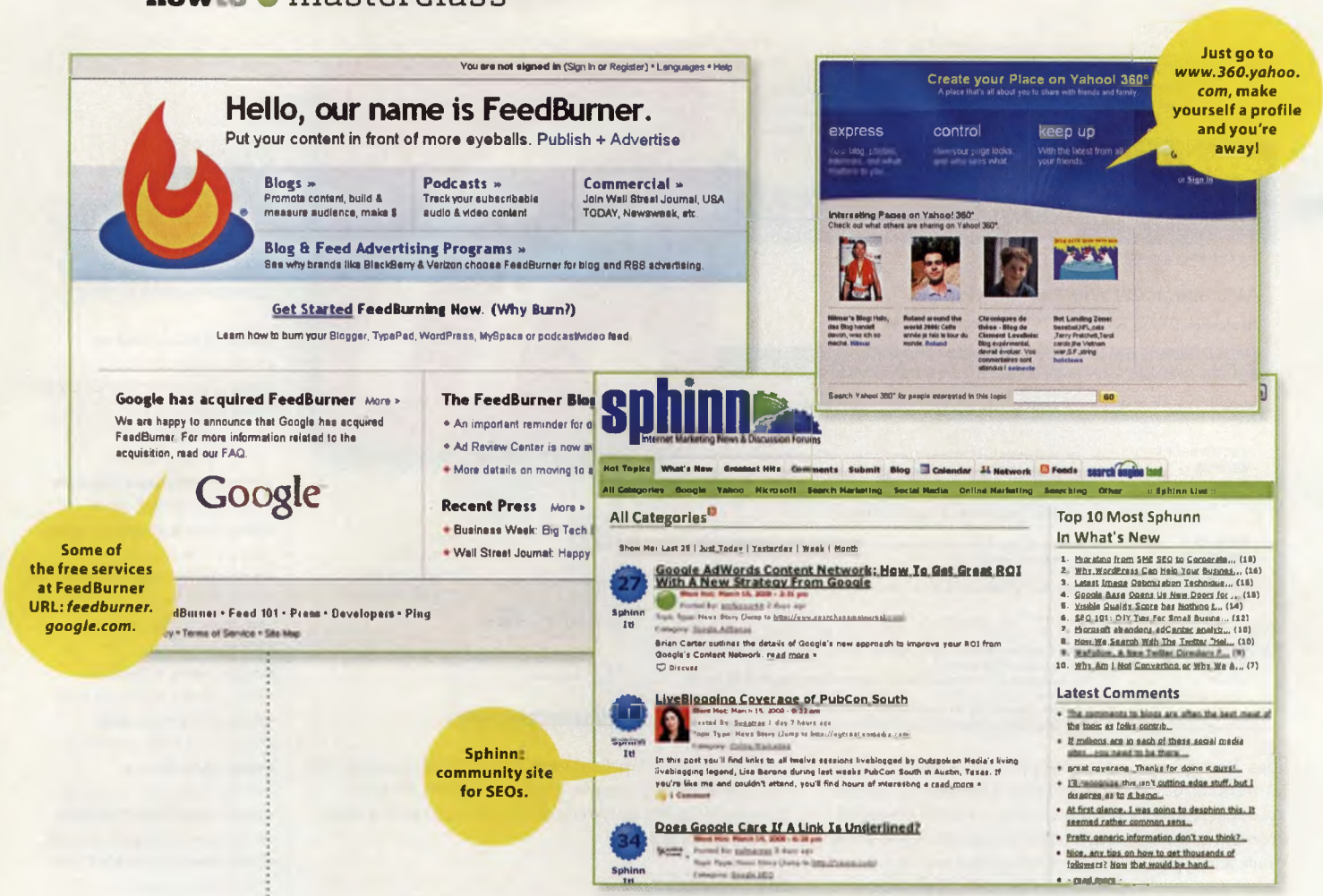
THE BLOGOSPHERE

Blogs are typically enabled with syndication features, so you don't even need to know the technical aspects of RSS or XML. The blogosphere is the amorphous network of people and their blogs who love to read other blogs and

MORE ABOUT... BOOKMARKING SITES

This is a partial list of social bookmarking sites:

- **http://del.icio.us.com**
- http://digg.com
- **http://www.technorati.com**
- http://myweb.yahoo.com
- **http://reddit.com**
- http://www.furl.net
- **http://www.newsvine.com**
- http://www.mixx.com
- **http://www.shoutwire.com**
- http://www.spurl.net
- **http://www.stumbleupon.com**
- http://ma.gnolia.com
- **http://www.netscape.com**
- http://www.rojo.com
- **http://www.simpy.com**
- http://www.shadows.com
- **http://linkarena.com**
- http://www.squidoo.com
- **http://bluedot.us**
- http://www.netvouz.com
- **http://www.blinkbits.com**
- http://www.blogmemes.net
- **http://www.searchles.com**
- http://buddymarks.com
- **http://linkfilter.net**
- http://www.listible.com
- **http://www.jaiku.com**
- http://www.memestreams.net
- **http://i89.us**
- http://www.backflip.com
- **http://www.bibsonomy.org**
- http://www.mister-wong.com
- **http://buddymarks.com**
- http://www.mylinkvault.com
- **http://spotback.com**
- http://www.a1-webmarks.com
- **http://www.clipclip.org**
- http://www.connectedy.com
- **http://www.oyax.com**
- http://www.myvmarks.com
- **http://www.tedigo.net**
- http://www.complore.com
- **http://www.info4it.com**
- http://www.mypip.com
- **http://space-ed.com**
- http://www.yattle.com
- **http://www.upchuckr.com**
- http://www.blinklist.com
- **http://www.folkd.com**


Hello, our name is FeedBurner.
Put your content in front of more eyeballs. Publish + Advertise
Blogs »
Podcasts »
Commercial »
Blog & Feed Advertising Programs »
Get Started FeedBurning Now. (Why Burn?)
Google has acquired FeedBurner
Google
Some of the free services at FeedBurner URL: feedburner.google.com.
Just go to www.360.yahoo.com, make yourself a profile and you're away!
Create your Place on Yahoo! 360°
express
control
keep up
sphinn
Internet Marketing News & Discussion Forums
All Categories
Top 10 Most Sphunn In What's New
Latest Comments
Google AdWords Content Network: How To Get Great ROI With A New Strategy From Google
LiveBlogging Coverage of PubCon South
Does Google Care If A Link Is Underlined?
Sphinn: community site for SEOs.

MORE ABOUT... USEFUL LINKS

- **http://pingomatic.com/** Notifies other notification services when your RSS-enabled site is updated.
- **http://publisher.yahoo.com/rss_guide/submit.php** Yahoo RSS Feed Submit.
- **http://tinyurl.com/35etd4** A Google paper describing how a blog search engine might rank blog content.

reference them in their own blogs. There are also automated notification services that enable this sort of interaction.

So what is the SEO benefit from blogs?

NO SPAMMING!

There are a few tools that enable you to make 'comments' to posts on other people's blogs by the thousands. They usually say inane things like:

'Hey, nice blog! See my site **www.spammyrubbish.com**.'

Sadly, many innocent people are sucked into buying tools that promise a 'flood' of traffic. This is unwise for several reasons:

- Getting links from an unknown site confers little, if any, ranking value.
- Nearly all blog comments have their links set to rel="nofollow", so the search engines take no note of the links for ranking, but you may get some human visitors.
- Some blog owners deliberately remove the "nofollow" restriction, making their blogs "dofollow", which attracts link-seeking commenters and spammers (the distinction is blurred).

FEEDBURNER

Google-owned FeedBurner is a great service for publicising your RSS feed. You should get an account there and list all your RSS-enabled sites.

YAHOO! 360°

Yahoo! 360° is one of several public social media sites that enables you to set up a personal page that includes a blog. Its links are useful as backlinks for SEO purposes, so it is worth placing a small blog with a link back to the target site.

SPHINN

Search Engine Land has a community site for SEOs called Sphinn (**http://sphinn.com**). It consists of links to SEO-related articles and blog posts made elsewhere and a voting model similar to Digg.

SOCIAL BOOKMARKING (SB)

Social Bookmarking sites enable you to set public bookmarks or favourites that can be viewed by anyone. You bookmark sites that you like and, if others like those sites, they will also bookmark them. This will generate human traffic; perhaps articles will be written about the sites and certainly links will be generated.

The key message is that there are no shortcuts with SBs. You cannot open a new account, post a URL and hope that you will get floods of traffic. You would be better off to join a dozen of these, participate every day for about five minutes per site (total = 1 hour) and bookmark good sites: not those of a client.

Once your reputation increases, you will find that others will trust your recommendations and check them

Photo Size:
Medium (500 x 375 pixels)
Photo Set (to Select From):
My Public PhotoStream
Photos from flickr (Click thumbnail image, to insert into post / page)
Flickr provides lots of optimisation opportunities.

USE FLICKR.COM

FLICKR IS AN IMAGE STORAGE AND SHARING SITE OPERATED BY YAHOO!

How are Flickr and other similar services good for SEO? Often, you would place a small thumbnail or a text link on a web site, probably a blog. You would link the thumbnails to the better-quality images on Flickr. The real image search optimisation takes place on Flickr:

- Use good photos: ones that will encourage viewers to link to or send a link to their friends. Exceptional photos create a viral effect and you will get a lot of casual visitors and some of them may even give a good link to your web site.
- Tag each photo with relevant keyphrases. If the tag consists of two or more words, enclose them in quote marks.
- Do not hide the images behind a password.
- Write keyphrase-rich (but not too rich!) descriptions and titles. Link good anchor text in the descriptions to your web site.
- Use the Note feature to write a clever comment that will encourage user participation.
- Place your images in sets based on their theme, which will make them easy to be found for that theme's keyphrases.
- If a Flickr Group exists for a theme, join it and share those pictures, which will attract some more links from group members. Large groups are better because they have a larger audience for your images.

Being a Yahoo! company, Flickr images are favoured by Yahoo! Image Search.

> THE KEY MESSAGE IS THAT THERE ARE NO SHORTCUTS WITH SB SITES

out. It may take you a year or more on, say, Digg, to get the magic touch. On many sites, your positive vote can be offset by negative votes, so an uninteresting site could be pushed quickly into oblivion.

You will have more success attracting SB traffic to an article or potentially viral content such as a blog post, an unusual video or a joke, than listing some business web site. This is why few businesses are suitable for submitting to an SB site.

HOW DO YOU USE SB FOR SEO?

- Check if the bookmarks of users are indexed by Google by using the inurl: operator, e.g. inurl:ma.gnolia.com. Keep a list of these for future reference.
- Open a user account at several such SB sites. If you are going to use it for only one customer, then pick a keyphrase relevant to that business, or pick a human name that will be easy to recognise.
- Use the accounts in a helpful manner, not just to the customer, but to the user community. Bookmark many useful sites until other users link internally to your pages. Join the SB's communities if any and be visible. Visit other users' pages.
- Use the site's tags (preferably the popular ones) to categorise your links, as this will enable the site's visitors to explore the tags and find your bookmarks.
- Find the site's popular users and become friendly with them in a genuine way. See which groups they belong to and join those groups. Contribute to those discussions and get yourself known and trusted.
- Continue using the account regularly after the SEO project has ended, as you may get new clients in the same industry.

SOCIAL CONTENT

Social content is user-generated, such as comments and forum posts. Creating content for sites such as **digg.com** can be seen as link bait.

The idea is to get others to link to you, but can Google tell whether you are a genuine authority site or whether you have faked that reputation? Nobody knows for sure.

DISCUSS ONLINE...

As we get into the more technical aspects of SEO, you might notice that space limitations don't allow certain topics to be covered in depth. If you have any question about this series, or about SEO in general, Ash is monitoring the SEO forum and will do his best to answer your questions. Plus, we have the earlier parts of this series online at *www.apcmag.com*

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ONLINE NEWS SITES

With the internet becoming more prolific by the day, a record number of people are heading online to get their daily dose of news, and why not? It's convenient, easy and it's free. Plus it saves paper and allows you to quickly read only the stories you want.

What's hot & not

TECHNOLOGY THERMOMETER

THE DAILY NEWSPAPER

They're over-large, make your hands black and are mostly full of crap you have no interest in reading. Plus you have to pay money for them! This is the dying bastion of the elderly, the long-haul commuters and the technologically inept. But... surprisingly, there's still a few years of life left in them.

DOWNTIME REVIEW

DualSim phone

The first locally distributed mobile phone that allows users to operate two sim cards in the one device. . . handy!

It's estimated that over five million of us switched-on Australians have more than one SIM card, which we either swap in and out of one phone or go through the inconvenience of carrying around two active phones. There are 5,000 searches on Google per day from Australia looking for dual-sim phones, which have only been available previously from manufacturers overseas.

With a dual-sim mobile phone, you can now separate personal and work lines in the one handset, or if you're a regular international traveller, you can keep your Australian SIM in your phone and add a local pre-paid SIM card to your handset to avoid paying the insanely expensive roaming charges on your Aussie connection.

Another advantage of the two SIMs option is the ability to save money by taking advantage of the various pre-paid deals offered by the telcos. With two sim cards you can mix-and-match deals by having Telstra's one-cent text option paired with Vodafone's "night talker", where you get bonus free calls 8pm to 8am to any network or landline.

The first phone on the market, the DualSim Slider (pictured) comes with a list of features that have become a necessity in mobile communications: Bluetooth, a two-megapixel camera, touch-pad controls and SD Card support, as well as a built-in MP3/MP4 player and an FM radio. All up, the DualSim Slider is a worthy replacement for all mid-range phones.

A good handset paired with a novel concept that consumers have been screaming out for should see the DualSim become a big success. (Providing not too much competition enters its market.)

Christopher Zammit

five
HI-POWER @ PLAY

01 GRIFFIN AIRCURVE

AirCurve is a cleverly-designed acoustic amplifier that turns your iPhone into a power-free mini sound system that never needs batteries or adapters. This elegant looking translucent polycarbonate stand has a coiled waveguide "horn" inside that amplifies the sound from the built-in speaker of your iPhone (by about 10 decibels) and projects it into the room. AirCurve's waveguide has been mathematically engineered to deliver a high level of amplification without any power use. An added pass-through slot also allows a docking cable to be fed through the AirCurve so you can sync or charge your iPhone while you listen.

.:: CONTACT Griffin Technology
.:: ONLINE www.griffintechnology.com
.:: PRICE US$19.99

02 JOURNEY TO THE CENTRE OF THE EARTH — IN 3D

Set in modern times, this Brendan-Fraser-helmed FX extravaganza stays true to the original film and book by H.G Wells. This was made as a sequel to the original film rather than a shameless remake. A lot of imagination has gone into making an underground world inhabited by strange beasts and even weirder plants seem plausible, with the rollercoaster ride (literally) of action kept flowing at a pretty constant pace throughout the film. A few scenes may scare the kids, but it's all harmless fun. To top it off, you also get four pairs of 3D glasses, so you can choose to watch either the 2D or 3D versions in HD right in your own home.

.:: CONTACT Village Roadshow
.:: ONLINE www.village.com.au
.:: PRICE $42.95

03 QUARANTINE BLU-RAY DISC

In the spirit of *Cloverfield* and the *Blair Witch Project*, Quarantine sees a documentary film crew tag along with the men of the NY fire brigade for the night. Their first call is to an apartment building where everything suddenly goes from bad to worse for them. Trapped in the building with the tenants, the film crew continue to video what happens, as the nightmare scene they are flung into unfolds around them.

This is one seriously freaky film that is truly scary. The first-person-view of watching this through the cameraman's perspective makes it all the more real and chilling. Quarantine is masterfully done and is sure to please most horror fans.

.:: CONTACT Sony Pictures
.:: ONLINE www.sonypictures.com.au
.:: PRICE $39.95

04 BODYGUARD EMERGENCY TOOL

Aimed at the outdoors person or the accident-prone, this gadget has everything you could need to help get you out of trouble. Crammed into a small robust package, the 12-in-1 bodyguard emergency tool includes a flashlight, a compass, a panic button and even a motion-activated proximity sensor. Cool. While you're stuck out in the middle of nowhere, you can kill time by listening to the inbuilt FM radio as you turn the hand crank on this self-charging device (in order to recharge your mobile phone so you can call for help). It even has an adaptor to charge your MP3 player so you can stick something in your ears to drown out your partner's nagging. Nice!

.:: CONTACT Swiss + Tech
.:: ONLINE www.thinkgeek.com
.:: PRICE US$19.99

BOSCH UNEO 3-IN-1 POWER TOOL

Trust me! This deserves to be here. Notebook battery technology has trickled down to other gadgets in the form of the Uneo 3-in-1 that boasts a Lithium-Ion battery that will allow you to screw, drill and rotary hammer for longer. Weighing in at only 1.1 kilograms, the Uneo is easy to use, with cordless technology and a long-lasting innovative 14.4-volt battery offering all the advantages of this modern battery technology: low weight and volume, hardly any self-discharge, rechargeable at any time. Delivering a force of up to 0.9 joules and 4,800 blows per minute, the Uneo is a hard-core DIY tool that even boasts its own LCD screen.

05

CONTACT	Bosch
ONLINE	www.bosch.com.au
PRICE	$229

PROGRAMMING VIDEO GAMES

Always wanted to be a genius game creator? This Evil Genius guide goes far beyond a typical programming class to reveal insider tips for breaking the rules and constructing fun games that you can tweak and customise to suit your needs! In *Programming Video Games for the Evil Genius*, programming wunderkind Ian Cinnamon gives you everything you need to create and control 57 gaming projects. You'll find easy-to-follow plans and a companion web site to get you building everything from racing games to board games, shooters, strategy, retro and puzzle games, which can be built and run on any PC, Mac, or Linux computer.

06

CONTACT	McGraw Hill
ONLINE	www.mcgraw-hill.com.au
PRICE	$42.96

PHOTOSHOP CS4 CLASSROOM

This is almost as good as having a personal instructor guiding you through each lesson while you work at your own pace. This book includes 13 self-paced lessons that let readers discover essential skills and explore new features and capabilities of Photoshop. Every lesson is presented in full colour with step-by-step instructions. Learning is reinforced with five-minute-long video tutorials and lesson files on a companion DVD that demonstrates and explains the concepts and features covered in the lesson. As confusing as Photoshop can be, this book is sure to make things a whole lot clearer for the newbies and pros alike.

07

CONTACT	Wiley Publishing
ONLINE	www.johnwiley.com.au
PRICE	$72.95

THIRD-GEN APPLE iPOD SHUFFLE

The third generation of the world's smallest music player has shrunk to nearly half the size of the previous model, and it's the first music player that talks to you. A new VoiceOver feature enables iPod shuffle to speak your song titles, artists and playlist names. Smaller than a AA battery, the 4GB drive holds up to 1,000 songs and is easy to use with all of the controls conveniently located on the earphone cord. With the press of a button, you can play, pause, adjust volume, switch playlists and hear the name of the song and artist. iPod shuffle features a new aluminum body design with a built-in stainless steel clip that makes it wearable.

08

CONTACT	Apple
ONLINE	www.apple.com.au
PRICE	$129

Quikfix
Released soon

NERF N-STRIKE WII BUNDLE
Offering the best of both worlds, the Nerf N-Strike Wii Bundle cunningly provides you with a real Nerf gun (the 'Switch Shot EX-3' with three included foam darts) which can also house a Wii Remote for video gameplay. Just pop the dart launcher mechanism out, slide the Wii Remote in and proceed to get ballistic (virtually, this time) with the included N-Strike Wii game developed by EA. Great for kids — just watch your eyes. Available for $89.95.

NBA LIVE 09
A little while ago, the fourteenth NBA Live dribbled its way onto the next-gen consoles, plus the PS2 and the PlayStation Portable and will set you back $100 (Xbox 360) at the most. Featuring the 'Pick-and-Roll control' system (we used to get in trouble for this at school), players now have the ability to run and control *both* players in two-man plays as well as a few other new options. There's no groundbreaking improvement since 08, but die-hard fans probably won't be disappointed.

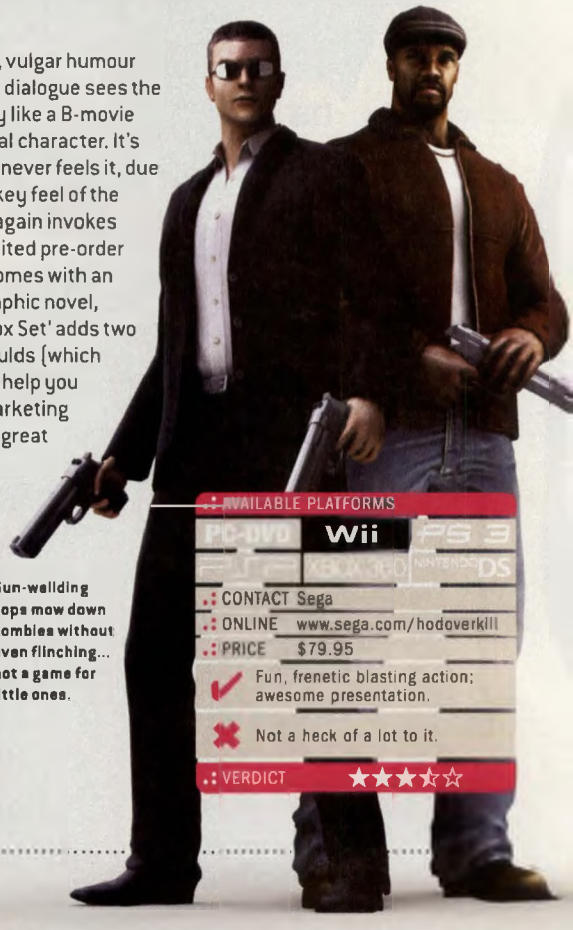
House of the Dead: Overkill

Peter Dockrill gets his zombie on.

A similar concept to last year's Resident Evil: The Umbrella Chronicles, The House of the Dead: Overkill is a lot more tongue in cheek, plus it's faster and more arcadey. You play as the mysterious Agent G, with his trusty companion Detective Isaac Washington, and basically your mandate is to blast through levels as hordes of zombies rain down upon you. The presentation of the game is remarkable: it's a very in-your-face, Tarantino-inspired homage to trashy/zombie/slasher films of the '70s — much like *Death Proof* and *Planet Terror* recently did on the big screen.

A kicking soundtrack, vulgar humour and abundant coarse dialogue sees the game essentially play like a B-movie with you as the central character. It's on-rails in nature but never feels it, due to the shifty and shakey feel of the main camera, which again invokes the cinema-feel. A limited pre-order 'Collector's Edition' comes with an 'uncensored' mini graphic novel, while a 'Bang Bang Box Set' adds two hand cannon gun moulds (which fit the Wii Remote) to help you get into character. Marketing gimmicks aside, its a great party shoot 'em up.

Gun-wielding cops mow down zombies without even flinching... not a game for little ones.



AVAILABLE PLATFORMS: PC-DVD, Wii, PS3, XBOX 360, NINTENDO DS

CONTACT Sega
ONLINE www.sega.com/hodoverkill
PRICE $79.95

✔ Fun, frenetic blasting action; awesome presentation.

✖ Not a heck of a lot to it.

VERDICT ★★★½☆

Dawn of War II

Glory for the first man to die! **Nick Race** hopes it isn't him.

Relic Entertainment's Dawn of War (and subsequent expansions) were a true tour de force of RTS gaming. Sure, it was unbalanced near the end, but for sheer amounts of fun, plus bringing a new formula in to the RTS field, it was groundbreaking.

This follow up, Dawn of War II (DoW2) plays with the traditional formula; ditching micromanagement of resources and structures, throwing the player into the hotseat with small squads of extremely capable troops.

The single player campaign follows the Aurelian Sub-Sector, home of the fearsome Blood Raven space marine chapter against the combined attacks from Orc, Eldar and Tyranid forces. The player commands four interchangeable squads at a time, allowing customisation through weapons and wargear collected along the campaign trail. The campaign is well done, with ample voice acting, video interludes and a good rocking story while still leaving side missions and options open to the player. Our only complaint is that it's all too brief and some early stability issues were frustrating.

Multiplayer is where RTS games either make or break it. DoW2 changes the formula, with limited play modes, offering only strategic take and hold or total annihilation options. The primary play mode is 3v3, making teamwork and co-ordination a more powerful tool than the biggest guns you can muster. Space Marine, Orc, Eldar and Tyranid forces are all playable and multiplayer allows you to build new units as you earn requisition from holding certain points on the map against the enemy.

DoW2 gives a needed breath of fresh air to the series, with improvements to the engine and graphics. The Warhammer 40,000 feel is there in spades, and fans of the original series or the tabletop game should definitely give it a go.

AVAILABLE PLATFORMS: PC-DVD, Wii, PS3, XBOX 360, NINTENDO DS

CONTACT THQ
ONLINE www.dawnofwargame.com
PRICE $99.95

✔ Quicker action; more Dawn of War goodness.

✖ A little short; limited multiplayer modes.

VERDICT ★★★★☆

Toprate

You've gotta try...

EMPIRE: TOTAL WAR

After missing the initial release date for 'finalisation and polish', the fourth in the Total War series from developers Creative Assembly is finally in our hot little hands. Empire: Total War is a turn-based, real-time strategy game that thrusts players back to the 18th century to manage and spearhead land and naval battles.

Total War can be split into three basic areas of play. Campaign: players choose a faction and head out to dominate the world real-time-strategy-style by managing resources, economics, politics, diplomacy and everything in between. Warfare: where players get down and dirty in the trenches and control battles in real-time on both land and sea, the latter being a new inclusion for the series. (*Hums that catchy tune; something about being *In the Navy*.)

The third area rounding out Total War is the online multiplayer, in which players have the ability to recreate historical battles, which is unsurprisingly a lot of fun. Empire: Total War is available now for the PC for $99.95

Run, jump, tumble, fight, repeat...

Mirror's Edge

Troy Coleman is fresh out of motion sickness tablets.

I remember when parkouring (free-running) was considered nothing more than cross-country running and was never undertaken by double-o agents or battery-powered rabbits. EA's Digital Illusions Creative Assembly (DICE) have taken the basic concept, thrown in some altitude, and run with it... pun fully intended.

Players take on the role of Faith Connors, a 'runner' who specialises in the delivery of messages between revolutionary groups in a totalitarian-regime-controlled city. High-access is the key here as (in first-person 'we hope you don't get motion sickness' view) Kate scampers, jumps and rolls from rooftop to rooftop, through building upon building to evade capture and to complete objectives. Evasion and momentum are paramount to success as there are many occasions where Kate is set upon by armed officers. At times it's necessary to take out the trash, and disarming enemies is the best option. Enemies automatic weapons can be used, but it's best to discard them when done as they slow you down once you get moving again.

'Levels', for want of another word, can be broken up into three basic types: running, evasion and puzzle. While the first two types are more or less the same, give or take an assault rifle or two, the puzzle levels involve a complicated series of difficult to reach/jump to/see platforms/rails/areas and can be downright ornery (and the definition of frustrating).

The city itself looks amazing and is easily the best-looking city I've seen in a game. The restricted colour palette gives everything a slightly surreal, over-polished, ultra-sharp appearance; it actually feels as though you're going to get cut just by playing this game.

While it's a single-player game, sections of levels have been isolated to be run as time trials with online leaderboards. Overall, the only major gripe is the game length; from beginning to end in less than six hours just doesn't cut it in this day and age. At least we have DLC to look forward to.

AVAILABLE PLATFORMS
PC-DVD PS3 XBOX 360

CONTACT EA
ONLINE www.mirrorsedge.com
PRICE $99.95

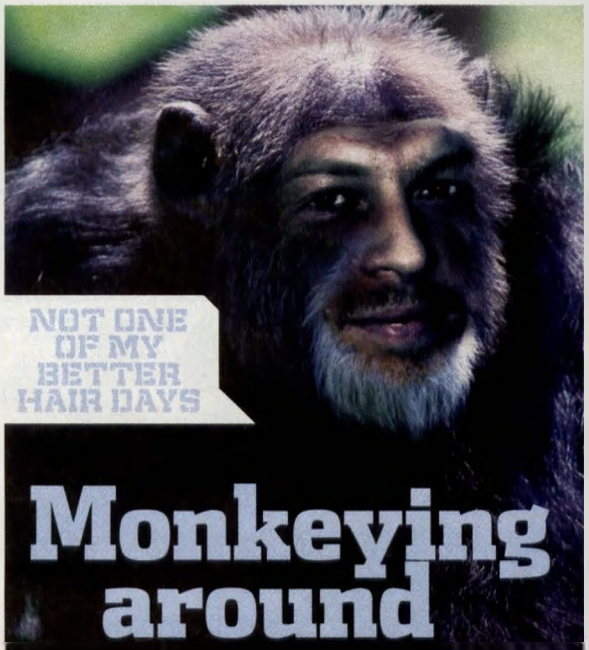
✔ Beautiful graphics/art style.

✖ Short; some utterly annoying puzzle levels.

VERDICT ★★★★½

chipchat

BY PETER DOCKRILL



Monkeying around

Those curious about their early ancestors (or exactly why their uncle has so much hair on the back of his neck) may stand to gain a lot in the way of understanding from the UK's Open University tribute site to the work of Charles Darwin, aptly titled 'Devolve Me'. Offering a real-time on-the-spot morphing engine, Devolve Me enables you to upload an image of yourself (or your uncle, as the case may be) in order to track a little of your chosen subject's evolutionary path... Okay, so as the site admits it's not exactly a precise science (but it is a bit of fun). Check out all the devolutionary action at **www.open.ac.uk/darwin/devolve-me.php**.

Tiltillating shots

Keeping with the photography jiggery-pokery theme this month, one particular form of imagery that has tantalised the blogosphere in the past year is Tilt Shift photography, which achieves a quite remarkable effect due to its rotation and movement of the lens relative to the image plane being captured. The end result is a bizarre amalgam of selective focus, which transforms most subjects into toy-like miniaturised caricatures of themselves, ie. an image of a steam locomotive chugging through an open field will inevitably end up bearing a striking resemblance to one Thomas the Tank Engine. Well, now you can fake the same effect (with some success, it must be said) at TiltShiftMaker.com, which replicates the appearance via a process of 'focal simulation'. Not that there's anything wrong with that...

Cooler for your iris

Now and again, you come across things on the web that just make your jaw drop: little (and sometimes big) innovations that make you realise just how much development and evolution is occurring day in and day out in the world of software and tech — and innovations that will inevitably have an effect on the way you personally compute. We lampoon the history of tech development in our *APC* Revolution column in Technotes each month because, seen from a distance of twenty years or so, such developments assume a humorous, antiquated persona. But, the fact of the matter is, these gradual evolutions add up to more than the sum of their parts. Take, for example, my recent discovery of **www.cooliris.com**, a simple browser plug-in that makes image searching a whole new visceral experience, like something out of *The Lawnmover Man*. Download it and have a go. APC

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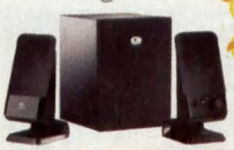
Logitech G9 $137

Logitech



Logitech R-20 $33

Logitech Z-2300 $119

FreeAgent™ Go

Seagate

250GB USB2.0 $139

320GB $155
500GB $229

FreeAgent™ 2 Desktop

500GB USB2.0 $149

1TB $219
1.5TB $299

NETGEAR

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NETGEAR WNB2100
•Surf, HD video, on-line games, VoIP calls
•Wireless-N Router &USB adapter
•Wi-Fi Protected Setup

$112

NETGEAR WNR834B
•Surf, email, HD video, online game,Internet phone calls
•RangeMax Wireless-N
•Built-in 4-port switch
•Wi-Fi Protected Setup

WD Western Digital

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Elements Portable

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500GB $189

1TB USB2.0 $183

Elements Desktop
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Antec

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ANTEC Nine Hundred Two GAMING CASE
• W/SIDE WINDOW - BLACK
• NO PSU

$245

Twelve Hundred Full Tower Gaming Case
• Advanced Cooling System
• NO PSU

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600W $93
650W $98

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M700 ..... $201

EARTHGWATTS

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500W $129
650W $146

Signature 650 .... $221
Signature 850 .... $283

MX-1 Enclosure $79

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TX 650 ..... $170
TX 750 ..... $212
TX 850 ..... $250

HX 520 ..... $151
HX 620 ..... $177
HX 1000 ..... $366

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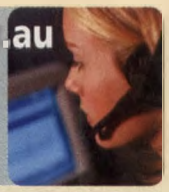

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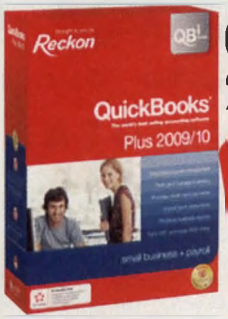

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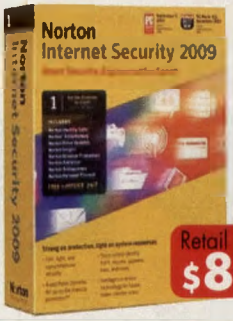

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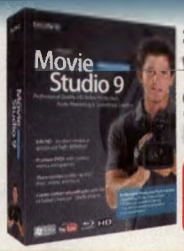
Corel Ulead **Paint Shop Pro Photo X2 Ultimate**

Upgrade **$99** | New Install **$135**



Sony **Vegas Movie Studio 9 Platinum Pro Pack**

New Install **$220**

ADOBE **Acrobat Pro V9**

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Scansoft/Nuance **PDF Converter Pro Version 5**

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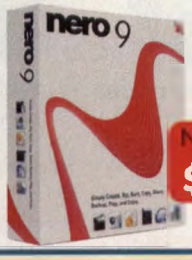
Dragon Naturally Speaking 10 Preferred

Std Headset **$235** | USB Headset **$265**



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* NVIDIA GTX 295 1.79GB DDR3
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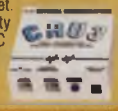

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DS4 is designed to be connected to an analogue extension of any PABX, Commander or other multi line telephone system. DS4 goes "off hook" when activated by the door phone. Requires surface mount or flush mount door phone.

DOOR STATION DIAL OUT

Our New DS6 model will RING your telephones and then DIAL OUT to a pre-programmed telephone number if a visitor arrives and you are not home. Requires Surface Mount or Flush Mount Door Phone. Can also connect to a PABX extension.

DOOR PHONES

A range of door phones are available

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FAXSTREAM DUET SWITCHES

Will allow your Fax or Modem device to operate with the Telstra FaxStream Duet service.

Provides fully automatic fax reception, just like having a separate line. Two models are available.

INTELLIGENT FAXSWITCH

FAX SWITCH will allow your existing Fax Device to connect to a Single Telephone line or a Multi Line (PABX) phone system, to provide for FULLY AUTOMATIC Fax operation. Will operate with all existing telephones and also an Answering machine.

INTELLIGENT MODEMSWITCH

MODEM SWITCH allows your existing Data Modem Device to connect to any Single Telephone Line, Fax Line or a Multi Line (PABX) phone system, to provide for FULLY AUTOMATIC Dial In & Dial Out Modem Data operation. Models available that allow up to 8 devices on 1 line.

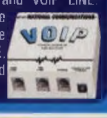
EFTPOS SWITCH

EFTPOS switch will allow your existing EFTPOS device to s... any existing Single Telephone Line, Fax Line or a Multi Line (PABX) phone system. Provides automatic connection on dialing. BARGE-IN protection prevents interference when line is in use. Alternative model will allow operation on 2 lines.

MISCELLANEOUS TELEPHONE LINE APPLICATION

VOIP SELECTOR

This device will allow you to connect one or more telephones to your TELEPHONE LINE and VOIP LINE. Incoming calls from either line ring on the connected telephone(s). Outgoing calls are automatically DEFAULTED to ONE LINE but the alternative line can be selected by DTMF code.



TWO LINE SELECTOR

Premium device will allow you to connect one Telephone Device to two Telephone lines (Telstra, Optus, VOIP, PABX etc). Ideal for EFTPOS, Cordless Phones, Modems etc. Additional features are provided, including automatic (or manual) selection of an alternative line if the default line is busy.

TELEPHONE CALL TRANSFER

Easy-Transfer will allow you to answer a call on one telephone and then TRANSFER the call to another telephone fitted to the same line. Also provides INTERCOM facility. Uses your existing telephones.

MULTIPLE NUMBER SWITCH

Operate Two numbers on one line. This device will con... your Multiple number calls to one set of phones or answering machine and your Normal number calls to another set of phones or answering machine.

TELEPHONE LINE ON HOLD SOLUTIONS

DIGITAL ON HOLD

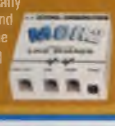
DMC, Australia's Leading On Hold player, is an MP3 based Message On Hold Device, designed to provide the High Quality and High Reliability that is necessary for all telephone On Hold applications. Easy message change provided by replacing memory card.

ELECTRONIC MESSAGE UPDATE

DMS is available with range of optional Automatic electronic message update methods including Email, Modem, FTP and Network IP. We have a National Network of Dealers ready to produce your customized message.

SINGLE LINE ON HOLD

Just plug our MOH Line Sharer into any socket on your single telephone line, connect any audio source (Radio, PC or DMC) and you now have a professional telephone line On Hold facility for your existing telephones.



AUTOMATIC CALL ATTENDANT

Our single line CALL ATTENDANT will answer y... incoming calls after a preset number of rings, ... a greeting & then put your call on hold until you are able to answer. Also provides Message on Hold facility for your single line.

MORE MISCELLANEOUS EQUIPMEN

TELEPHONE LINE SIMULATOR

This TELEPHONE LINE SIMULATOR can be used for testing, programming & demonstration of analogue telecommunications equipment, without the need to use a telephone line and generating costly calls. 4 Models are available.

RING INDICATOR

This device detects incoming calls and will close/open a relay to match the cadence of the incoming ring. Can also be set to close a relay until a call is answered. Ideal for control of external horns or lights to advise of an incoming telephone call.

REMOTE TELEPHONE ACTIVATOR

Call in to Switch ON, Switch OFF or RESET your PC, SERVER or any electrical device by telephone line using touch tone commands. RTA connects to any telephone line. Requires PCU accessory. 3 models are available.

POWER CONTROL UNIT

PCU connects direct to the RTA and also to your po... socket to allow telephone line dial in switching of the 240V supply connected to your equipment. Easy Plug In User Installation. Controls up to 10 Amps.

DIGITAL AUDIO EQUIPMENT

MESSAGE ON DEMAND

MOD can be programmed with up to 256 MP3 based messages stored on an MMC/SD card, which can be recalled and played by keypad entry or time programmed sequences.

BACKGROUND MUSIC SYSTEM

High Quality BMS holds up to 8GB of MP3 Music Messages on a SD Flash Card. Plays Messages at user set intervals. Powerful internal amp will allow direct connection of up to 8 speakers. Line Level output is also provided. Mas encryption facility.

TALKING DISPLAY UNIT

TDU will play 1 or more pre-recorded messages as soon it is triggered by a movement sensor, a switch, or a preset time interval. Ideal for Product Promotions, Product Information, Message Warnings etc.

MULTIPLE INPUT UNIT

MIU will allow for up to 12 separate conventional sensor switches to be connected to the TDU. Each sensor trig... its own unique message, output via any 8 ohm unpowered, powered or amplified speaker.

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- Wi-Fi Protected Setup (WPS)
- Voice over IP compliant with Sip standard
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- Two FXS ports for connecting to regular telephones
- One FXO port for voice calls via PSTN fixed-line
- 16 IPSec VPN tunnels (BiPAC 7404VGOX)

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